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<151> 2007-12-18

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cagtatccgg agtatgcatt gacggtcacg ggtcacaggt atgatagttt ctctggct 480

acgttctcac aaccataccc tcttttatc catgtcgtt ttgacttga ctgacgtaca 540

tgatccagtc tgggtgctc gatggcagca ataactgcta gccagctgtc cgctacatac 600

gagcatgtca cattgtacac ctccggcgaa ccgcggaactg gcaacctggc atacgcatcg 660

tatatgaatg agaatttca agcgacgagc cctgagacaa ctcggttctt tcgtgtcacc 720

cacggcaacg atggaatccc aaacctgcca ccggctgaac agggctatgt tcattctggc 780

attgaatact ggagtgtcga tccccatgc cctggttagca cgagtgtctg cactggaaat 840

gaggccagt gctgtgaggc tcaggaggga caggggggtga atgatgatca tataacttat 900

ttgggatgg cgagcggagc ttgcagctgg tag 933

<210> 12

<211> 280

<212> PRT

<213> *Penicillium chrysogenum*

<400> 12

Met Lys Ile Ser Ala Pro Arg Ala Leu Ala Leu Ser Val Ala Val Gly
 1 5 10 15

His Ala Leu Ala Ala Val Thr Lys Gly Val Ser Asp Asn Ile Tyr Asn
 20 25 30

Arg Leu Val Asp Met Ala Thr Ile Ser Gln Ala Ala Tyr Ala Asp Leu
 35 40 45

Cys Lys Ile Pro Ala Thr Ile Thr Thr Val Glu Lys Ile Tyr Asn Ala
 50 55 60

Gln Thr Asp Ile Asn Gly Trp Val Leu Arg Asp Asp Ser Arg Gln Glu
 65 70 75 80

Ile Ile Val Val Phe Arg Gly Thr Ala Gly Asp Thr Asn Leu Gln Leu
 85 90 95

Asp Thr Asn Tyr Thr Leu Ala Pro Phe Asp Thr Leu Pro Lys Cys Ile
 100 105 110

Gly Cys Ala Val His Gly Gly Tyr Tyr Leu Gly Trp Thr Ser Val Gln
 115 120 125

Asp Gln Val Glu Ser Leu Val Gln Gln Gln Ala Gly Gln Tyr Pro Glu
 130 135 140

Tyr Ala Leu Thr Val Thr Gly His Ser Leu Gly Ala Ser Met Ala Ala
 145 150 155 160

Ile Thr Ala Ser Gln Leu Ser Ala Thr Tyr Glu His Val Thr Leu Tyr
 165 170 175

Thr Phe Gly Glu Pro Arg Thr Gly Asn Leu Ala Tyr Ala Ser Tyr Met

180 185 190

Asn Glu Asn Phe Glu Ala Thr Ser Pro Glu Thr Thr Arg Phe Phe Arg
195 200 205

Val Thr His Gly Asn Asp Gly Ile Pro Asn Leu Pro Pro Ala Glu Gln
210 215 220

Gly Tyr Val His Ser Gly Ile Glu Tyr Trp Ser Val Asp Pro His Arg
225 230 235 240

Pro Gly Ser Thr Ser Val Cys Thr Gly Asn Glu Val Gln Cys Cys Glu
245 250 255

Ala Gln Gly Gly Gln Gly Val Asn Asp Asp His Ile Thr Tyr Phe Gly
260 265 270

Met Ala Ser Gly Ala Cys Ser Trp
275 280

<210> 13
<211> 1341
<212> DNA
<213> *Penicillium chrysogenum*

<400> 13
atgggtttcc taaagctcct ctcgacgtcc cttgcgactc tggcagtcgt taatgccggt 60
aagctcctta ccgccaatga cggcgacgag gtcgttcta gctcctacat tgcgtcatg 120
aatgatggtg ttagcaccgc gcagttgaa acccaccgta actgggctgc aaatgttcat 180
gctcgtacca ggagtctcaa ggggtggcgag tctggaccag ggaagcattt cgacatcaat 240
ggcatgaaag gatacagcgc tagcttcgat gatcgtaccg tcaaagacat tgctagtac 300
ccgacgggat ggccttccat taccacggtt gattcctcaa gagcgtgttg aaatctgacc 360
cgcagtgcaa atataggtca agtacgttga accagacatg gttgtgaacg cgaccgcaa 420
cgtgggtcag cgcaatgctc cttcatgggg tctctctcgc atctctagca agaagtcggg 480

tgctaccgac tatgtgatg actctactgc tggtagggc atcgtgatct atggcgtcga 540
 caccggcatt gacattgggc atgcggactt tgggggccgc gctgagtggg gcaccaacac 600
 tgctgacaat gatgacactg acggcaatgg ccatggcacc cacactgcat ctactgcagc 660
 gggcagcaag ttcggtgttg caaagaaggc ctctgtcgtt gctgttaagg tccttggtgc 720
 cgatggttct ggaaccaatt cgcaagtcat cgctggcatg gattgggccg tcaaagattc 780
 aaagtctcgc ggcgccactg gcaagtctgt tatgaacatg tctctgggtg gtgcctattc 840
 ccgggctatg aatgacgccg ctgccaatgt cgtagatcc ggtgtcttc tctctgttgc 900
 tgccggcaat gaagcccagg atgcgagtaa cagctcccct gctctgctc cgaatgtatg 960
 cactattgcc gcttctacca actcagacgg aagtgtctcc tcaccaact tcggttccgt 1020
 tggtagaac tccacctctc ccttagtgcg aagtgtgctt ggtggtcgag gaattgtact 1080
 gacggtatta ctacagtcga cctctatgct cctgggaagg acatcacggc cgcataccct 1140
 ggtggtggct caaagaccct gtccggaacc tctatggctg ccccgcatgt tgctggtgct 1200
 gccgcctacc tgatggctct cgaggggtgtg acctctgata aagcttgccg ccgtattgtc 1260
 gagcttgcta tctcgtctat ctccagcgct ccgtccggca ctaccagcaa gcttctgtat 1320
 aacggtatca acgccaatg a 1341

<210> 14
 <211> 307
 <212> PRT
 <213> *Penicillium chrysogenum*

<400> 14

Met Arg Phe Ser Phe Phe Thr Ala Leu Ser Ala Val Ala Ser Leu Gly
 1 5 10 15

His Ala Leu Pro Gly Lys Val Gln Thr Arg Asp Val Ser Thr Ser Glu
 20 25 30

Leu Asn Gln Phe Gly Phe Trp Val Gln Tyr Ala Ala Ala Thr Tyr Tyr

35

40

45

Ile Glu Asn Tyr Asp Ala Gln Val Gly Asp Lys Ile Ser Cys Ser Lys
 50 55 60

Gly Asn Cys Pro Glu Val Glu Gln Thr Gly Ala Thr Val Phe Tyr Asp
 65 70 75 80

Phe Ser Lys Thr Thr Ile Thr Asp Thr Ala Gly Phe Ile Ala Val Asp
 85 90 95

His Thr Asn Ala Ala Val Val Leu Ala Phe Arg Gly Ser Tyr Ser Val
 100 105 110

Arg Asn Trp Val Ser Asp Ala Thr Phe Ile His Thr Asn Pro Asp Leu
 115 120 125

Cys Asp Gly Cys Leu Ala Glu Leu Gly Phe Trp Ser Ser Trp Glu Leu
 130 135 140

Val Arg Asp Asp Ile Ile Lys Glu Leu Lys Asp Ala Val Thr Gln Asn
 145 150 155 160

Pro Asp Tyr Glu Leu Val Val Val Gly His Ser Leu Gly Ala Ala Val
 165 170 175

Ala Thr Leu Ala Ala Ala Asp Leu Arg Gly Lys Gly Tyr Pro Ser Ala
 180 185 190

Lys Leu Tyr Ala Tyr Ala Ser Pro Arg Val Ala Asn Ala Ala Leu Ala
 195 200 205

Lys Tyr Ile Thr Ala Gln Gly Asn Asn Tyr Arg Phe Thr His Thr Asn
 210 215 220

Asp Pro Val Pro Lys Leu Pro Leu Leu Ser Met Gly Tyr Val His Val

225 230 235 240

Ser Pro Glu Tyr Trp Ile Thr Ser Pro Asn Asn Ala Thr Val Ser Thr
 245 250 255

Ser Asp Ile Lys Val Ile Gln Gly Asp Val Ser Phe Asp Gly Asn Thr
 260 265 270

Gly Thr Gly Leu Pro Leu Leu Thr Asp Phe Glu Ala His Val Trp Tyr
 275 280 285

Phe Val His Val Asp Ala Gly Lys Gly Pro Gly Leu Pro Phe Lys Arg
 290 295 300

Gly Ser Ile
305

<210> 15
<211> 1064
<212> DNA
<213> *Penicillium chrysogenum*

<400> 15
atggttggtc ttggtcggt ttgtggtatc gcagctctcg cagtggtagc ggttgctgct 60
ccttctcgtc ctgttctcgc gggtatggat atgcaatttt tagttcatgc cctccggtaa 120
ccaactaaca agcaatagat gtgtccactg atgtgcttaa tcagttgacc cgattctctc 180
aatgggctgc ggcgtcatac tgcacgaaca ataacgactc aaccggggat gcgctatctt 240
gcgaggaaga caactgtcca ttagtggagt ctgctgacac aatttctcta tacgagtttg 300
ataagtatga aatcaacttg caaagtcgct cacaactgtt aattaacaca gtgtcaccta 360
ttagggtctg cagctatggc aatgttgccg gcttctcgc ggcggacaaa acaaacaagc 420
tactcgtcgt ctcttccgg ggtagccgct caataagcac ttggattgcg aacatcaact 480
tcggcttgac cgatgccagc agtatctgca gcgactgca agcccacagc gggttcttgg 540
aatcctggga gaccgtcgcg gatgatctga cagccaagat caaggccgca cagacaacat 600

acccgggcta cactctgtc ctgaccggcc acagcttcgg tgcggctctt gccacgttgg 660
 gaggtagtgt gcttcgtaat gcgggatatg aaccgaatgt ggtgagtacc atgttttgt 720
 tttgaatcag tctttgtaa tagtgatac tcacgggact atagtattcc tatggccagc 780
 cacgtgtggg caatgaggct ctggctaaat acatcacgga gcaaggcagt ctctggcgtg 840
 tgacgcatca agatgacctg gtgcctaagt tgccacctgc aagtgttgg ttagccacg 900
 caagtcccga gtactggatt actagtgacg acgatacaac ggtgacctcg tctgatattg 960
 atgtcattga gggcgttggc tcgaagtctg gaaatgcggg gacattgaac ccggatgttg 1020
 gggcacatag ctggtacttg ggacctatta ccgcatgcca atag 1064

<210> 16
 <211> 398
 <212> PRT
 <213> *Penicillium chrysogenum*

<400> 16

Met Gly Phe Leu Lys Leu Leu Ser Thr Ser Leu Ala Thr Leu Ala Val
 1 5 10 15

Val Asn Ala Gly Lys Leu Leu Thr Ala Asn Asp Gly Asp Glu Val Val
 20 25 30

Pro Ser Ser Tyr Ile Val Val Met Asn Asp Gly Val Ser Thr Ala Gln
 35 40 45

Phe Glu Thr His Arg Asn Trp Ala Ala Asn Val His Ala Arg Thr Arg
 50 55 60

Ser Leu Lys Gly Gly Glu Ser Gly Pro Gly Lys His Phe Asp Ile Asn
 65 70 75 80

Gly Met Lys Gly Tyr Ser Ala Ser Phe Asp Asp Arg Thr Val Lys Asp
 85 90 95

Ile Ala Ser Asp Pro Thr Val Lys Tyr Val Glu Pro Asp Met Val Val
 100 105 110

Asn Ala Thr Ala Asn Val Val Gln Arg Asn Ala Pro Ser Trp Gly Leu
 115 120 125

Ser Arg Ile Ser Ser Lys Lys Ser Gly Ala Thr Asp Tyr Val Tyr Asp
 130 135 140

Ser Thr Ala Gly Glu Gly Ile Val Ile Tyr Gly Val Asp Thr Gly Ile
 145 150 155 160

Asp Ile Gly His Ala Asp Phe Gly Gly Arg Ala Glu Trp Gly Thr Asn
 165 170 175

Thr Ala Asp Asn Asp Asp Thr Asp Gly Asn Gly His Gly Thr His Thr
 180 185 190

Ala Ser Thr Ala Ala Gly Ser Lys Phe Gly Val Ala Lys Lys Ala Ser
 195 200 205

Val Val Ala Val Lys Val Leu Gly Ala Asp Gly Ser Gly Thr Asn Ser
 210 215 220

Gln Val Ile Ala Gly Met Asp Trp Ala Val Lys Asp Ser Lys Ser Arg
 225 230 235 240

Gly Ala Thr Gly Lys Ser Val Met Asn Met Ser Leu Gly Gly Ala Tyr
 245 250 255

Ser Arg Ala Met Asn Asp Ala Ala Ala Asn Val Val Arg Ser Gly Val
 260 265 270

Phe Leu Ser Val Ala Ala Gly Asn Glu Ala Gln Asp Ala Ser Asn Ser
 275 280 285

Ser Pro Ala Ser Ala Pro Asn Val Cys Thr Ile Ala Ala Ser Thr Asn
 290 295 300

Ser Asp Gly Ser Ala Ser Phe Thr Asn Phe Gly Ser Val Val Asp Leu
 305 310 315 320

Tyr Ala Pro Gly Lys Asp Ile Thr Ala Ala Tyr Pro Gly Gly Gly Ser
 325 330 335

Lys Thr Leu Ser Gly Thr Ser Met Ala Ala Pro His Val Ala Gly Ala
 340 345 350

Ala Ala Tyr Leu Met Ala Leu Glu Gly Val Thr Ser Asp Lys Ala Cys
 355 360 365

Ala Arg Ile Val Glu Leu Ala Ile Ser Ser Ile Ser Ser Ala Pro Ser
 370 375 380

Gly Thr Thr Ser Lys Leu Leu Tyr Asn Gly Ile Asn Ala Gln
 385 390 395

<210> 17

<211> 1040

<212> DNA

<213> *Penicillium chrysogenum*

<400> 17

atgcgtttct ctttctttac ggccctatcc gcagtggctt cgttgggtca tgccctcccc 60

gggaaagtgc agactcgagg tactatccca cacactttgt tcgtatacg ttgaccacat 120

tgctcacacc tgggtagatg ttgcgaccag cgaactaaac cagttcggct tctgggttca 180

gtacgccgcc gcgacatact atatcgagaa ctatgacgct caagtgggcg acaagatcag 240

ttgttcgaaa ggcaactgcc ccgaagtcca gcaaacgggt gcgactgtat tctatgactt 300

ttccaagtaa gcgacatcac aacccccaat aactactgga gatgagatac ttacacatgc 360

acaggaccac catcacagac accgccggct tcattgcagt agaccacacc aacgcggcag 420

ttgttctggc ctccgcggg tctactcag tgcgcaactg ggtcagcgat gccacattca 480
 tacacacaaa ccctgatctc tgtgacggat gcctcgccga gctcggcttc tggagctcat 540
 gggagctagt ccgcgacgac atcatcaagg aactgaaaga tgccgtcact cagaaccccc 600
 actacgagct agtcgtagta ggccacagcc ttggcgccgc cgtcgcaacc ctgctgccg 660
 ctgatctccg gggaaaaggc taccgctcgg ctaagctgta cgcgtatgcc tcgcctcgcg 720
 tggccaatgc ggctttggcc aagtatatta cggcgcaggg aaacaactac cgtttactc 780
 ataccaatga cccggtcctt aagttgccgt tgtgtccat gggctatgtt catgtcagtc 840
 ctgagtattg gatcacatcg cctaacaatg ccactgtcag tactctgat attaaggta 900
 ttcagggaga tgtctcctt gacggaaaca ctggaactgg ttgccgttg ctgacggact 960
 ttgaggcgca tgtctggtac tttgtgcacg tcgatgccgg caagggccct gggctgccgt 1020
 tcaagagggg ttcaattga 1040

<210> 18
 <211> 289
 <212> PRT
 <213> *Penicillium chrysogenum*

<400> 18

Met Val Val Leu Gly Arg Leu Cys Gly Ile Ala Ala Leu Ala Val Val
 1 5 10 15

Thr Val Ala Ala Pro Ser His Val Ser Thr Asp Val Leu Asn Gln Leu
 20 25 30

Thr Arg Phe Ser Gln Trp Ala Ala Ala Ser Tyr Cys Thr Asn Asn Asn
 35 40 45

Asp Ser Thr Gly Asp Ala Leu Ser Cys Glu Glu Asp Asn Cys Pro Leu
 50 55 60

Val Glu Ser Ala Asp Thr Ile Ser Leu Tyr Glu Phe Asp Lys Val Cys

65 70 75 80
 Ser Tyr Gly Asn Val Ala Gly Phe Leu Ala Ala Asp Lys Thr Asn Lys
 85 90 95
 Leu Leu Val Val Ser Phe Arg Gly Ser Arg Ser Ile Ser Thr Trp Ile
 100 105 110
 Ala Asn Ile Asn Phe Gly Leu Thr Asp Ala Ser Ser Ile Cys Ser Asp
 115 120 125
 Cys Glu Ala His Ser Gly Phe Leu Glu Ser Trp Glu Thr Val Ala Asp
 130 135 140
 Asp Leu Thr Ala Lys Ile Lys Ala Ala Gln Thr Thr Tyr Pro Gly Tyr
 145 150 155 160
 Thr Leu Val Leu Thr Gly His Ser Phe Gly Ala Ala Leu Ala Thr Leu
 165 170 175
 Gly Gly Ser Val Leu Arg Asn Ala Gly Tyr Glu Pro Asn Val Tyr Ser
 180 185 190
 Tyr Gly Gln Pro Arg Val Gly Asn Glu Ala Leu Ala Lys Tyr Ile Thr
 195 200 205
 Glu Gln Gly Ser Leu Trp Arg Val Thr His Gln Asp Asp Leu Val Pro
 210 215 220
 Lys Leu Pro Pro Ala Ser Val Gly Phe Ser His Ala Ser Pro Glu Tyr
 225 230 235 240
 Trp Ile Thr Ser Asp Asp Asp Thr Thr Val Thr Ser Ser Asp Ile Asp
 245 250 255
 Val Ile Glu Gly Val Gly Ser Lys Ser Gly Asn Ala Gly Thr Leu Asn

260 265 270

Pro Asp Val Gly Ala His Ser Trp Tyr Leu Gly Pro Ile Thr Ala Cys
 275 280 285

Gln

<210> 19
 <211> 1605
 <212> DNA
 <213> *Penicillium chrysogenum*

<400> 19
 atgaaaggct tccttagcct aacactactc ccgttgttgg tagctgcctc gcccgtggca 60
 gtaaactcca tccacaatga cgctgctcct atcctctcct ccatgacctc aaaagatatt 120
 ccggattcct acatcgttgt attcaagaag catgttgacc cgagctctgc ctccgctcac 180
 cagagctggg tgcaggaggt gcacaccgct cataccgggc ggatggaggt gaagaagcgc 240
 tccctgttcg gtttcgactt tgaggcttcc atgggcctga agcacacttt ccacattgct 300
 ggatcactcc tcggatatgc tggtcacttc caccgaggatg tcatcgagca gatccgccgc 360
 catcctgatg tgagtaatcc cattccctcc atacgggagt tcccgaggtc agcggctaata 420
 gtgactcaaa acaggttgat tacatcgaga aggactctga ggtccgtact atgtccgaag 480
 gtagtgttga gaagaacgcc ccttgggggc ttgcccgat ctctcacctg gaaagcctct 540
 cgttcggcaa ctcaacaag tatttgatg ccgaggaagg tggcgagggt gtcgatgctt 600
 acgttattga tactggcgcc aacgtcaagc acgttgactt tgagggccgc gccaaactggg 660
 gcaagactat cccccagggt gatgccgatg aggatggaaa cggtcacgga actcactgct 720
 ctggcactat tgccggcaag aagttcggtg tcgccaagaa ggccaacgtc tacgtgttta 780
 aggttcttcg ctctaattggc tcgggtacta tgtccgatgt cgtcaagggt gttgaatggg 840
 cggccgaggc tcacatcaag aagtccaaga agggcgataa gaagtccaag ggtagcgttg 900
 ccaacatgtc tctcggtggc ggtagctctc gtaccctgga tctcgccgtg aatgccgctg 960

ttgatgctgg tattcacttc gctgttgctg cgggcaatga caacgctgac gcatgcaact 1020
 actccccgc tgctgccgag aaggccatca ctgttggcgc ctccaccctg gctgacgagc 1080
 gtgcttactt ctccaactat ggaaagtgc ctgacatctt cgcccccggt ctgaacatcc 1140
 tctctacctg ggttggtagc gaccatgcc acaacaccat ttctggcacc tccatggcct 1200
 ctctcacat cgccggttg ctggcctact acgtctcct ggcacccgcc aaggactcgg 1260
 cctatgctgt tgccgatgtc acccctaagc agctcaaggc tgctctcgc agcgtcgcca 1320
 ctgaggggaac acttactgac attcctccg acacccccaa cgtaagttgt cactcctatt 1380
 cagataacaa tgaattgtgc taacctttta tcttagcttc tggcctggaa cggtggtggc 1440
 tccgccaatt acactaagat ccttgccgat ggtggttaca aggctcaca tgctgagacc 1500
 accgtcgagg atcgattgg cggcatcatc gacagcgctg agaaggcctt tcacaaggag 1560
 ctcgcgcta tctacagcga gatcaaggat gctgtctctg catag 1605

<210> 20

<211> 494

<212> PRT

<213> *Penicillium chrysogenum*

<400> 20

Met Lys Gly Phe Leu Ser Leu Thr Leu Leu Pro Leu Leu Val Ala Ala
 1 5 10 15

Ser Pro Val Ala Val Asn Ser Ile His Asn Asp Ala Ala Pro Ile Leu
 20 25 30

Ser Ser Met Thr Ser Lys Asp Ile Pro Asp Ser Tyr Ile Val Val Phe
 35 40 45

Lys Lys His Val Asp Pro Ser Ser Ala Ser Ala His Gln Ser Trp Leu
 50 55 60

Gln Glu Val His Thr Ala His Thr Gly Arg Met Glu Leu Lys Lys Arg

65

70

75

80

Ser Leu Phe Gly Phe Asp Phe Glu Ala Phe Met Gly Leu Lys His Thr
 85 90 95

Phe His Ile Ala Gly Ser Leu Leu Gly Tyr Ala Gly His Phe His Glu
 100 105 110

Asp Val Ile Glu Gln Ile Arg Arg His Pro Asp Val Asp Tyr Ile Glu
 115 120 125

Lys Asp Ser Glu Val Arg Thr Met Ser Glu Gly Ser Val Glu Lys Asn
 130 135 140

Ala Pro Trp Gly Leu Ala Arg Ile Ser His Arg Glu Ser Leu Ser Phe
 145 150 155 160

Gly Asn Phe Asn Lys Tyr Leu Tyr Ala Glu Glu Gly Gly Glu Gly Val
 165 170 175

Asp Ala Tyr Val Ile Asp Thr Gly Ala Asn Val Lys His Val Asp Phe
 180 185 190

Glu Gly Arg Ala Asn Trp Gly Lys Thr Ile Pro Gln Gly Asp Ala Asp
 195 200 205

Glu Asp Gly Asn Gly His Gly Thr His Cys Ser Gly Thr Ile Ala Gly
 210 215 220

Lys Lys Phe Gly Val Ala Lys Lys Ala Asn Val Tyr Ala Val Lys Val
 225 230 235 240

Leu Arg Ser Asn Gly Ser Gly Thr Met Ser Asp Val Val Lys Gly Val
 245 250 255

Glu Trp Ala Ala Glu Ala His Ile Lys Lys Ser Lys Lys Gly Asp Lys

260 265 270

Lys Phe Lys Gly Ser Val Ala Asn Met Ser Leu Gly Gly Gly Ser Ser
275 280 285

Arg Thr Leu Asp Leu Ala Val Asn Ala Ala Val Asp Ala Gly Ile His
290 295 300

Phe Ala Val Ala Ala Gly Asn Asp Asn Ala Asp Ala Cys Asn Tyr Ser
305 310 315 320

Pro Ala Ala Ala Glu Lys Ala Ile Thr Val Gly Ala Ser Thr Leu Ala
325 330 335

Asp Glu Arg Ala Tyr Phe Ser Asn Tyr Gly Lys Cys Thr Asp Ile Phe
340 345 350

Ala Pro Gly Leu Asn Ile Leu Ser Thr Trp Val Gly Ser Asp His Ala
355 360 365

Thr Asn Thr Ile Ser Gly Thr Ser Met Ala Ser Pro His Ile Ala Gly
370 375 380

Leu Leu Ala Tyr Tyr Val Ser Leu Ala Pro Ala Lys Asp Ser Ala Tyr
385 390 395 400

Ala Val Ala Asp Val Thr Pro Lys Gln Leu Lys Ala Ala Leu Ile Ser
405 410 415

Val Ala Thr Glu Gly Thr Leu Thr Asp Ile Pro Ser Asp Thr Pro Asn
420 425 430

Leu Leu Ala Trp Asn Gly Gly Gly Ser Ala Asn Tyr Thr Lys Ile Leu
435 440 445

Ala Asp Gly Gly Tyr Lys Ala His Asn Ala Glu Thr Thr Val Glu Asp

450 455 460

Arg Ile Gly Gly Ile Ile Asp Ser Ala Glu Lys Ala Phe His Lys Glu
465 470 475 480

Leu Gly Ala Ile Tyr Ser Glu Ile Lys Asp Ala Val Ser Ala
485 490

<210> 21
<211> 1371
<212> DNA
<213> *Penicillium chrysogenum*

<400> 21
atgcgctgtc acaaagtgtc ccggtttgtt ttcttcgtat caatatcgct tggtagtcca 60
gtgccttcct atacatcgaa aggggctcag gatggtccag gcatctttaa caaactattc 120
aacacatcca caagtcgcg ctccttcagc acggacatat atcaagagct atctcagctc 180
caagccaaga tatcagatat tgcaacaggc aaaatcaagc cagtttcaac catcgaaaaa 240
ggtctctcag tcctttcctc aattccacac gacaacaacc gaacaagcct tcaaaacgcc 300
atcgacatag tatccctagg tctagtccca tcaagtatca ccgacattct caacggcata 360
acaaaccacg aaataaactc catagccaac aacaacacaa agaaccaaac cccacggatc 420
cacccaacaa ggtcgtttga ggacgcaccc tatgacatcc ccgaagaaag actccgcagc 480
gcaatttaca tccccccagc cttttctat ggcgaaaaca acaaaatccc cgtctccta 540
gtcccaggaa ccgccgatcc agccggcagc acctactact tcagctacgc gaaactcttt 600
accgcaaacc cacacacaga ccagtatgg gtcaacatcc cggaaaactc gctgggtgac 660
atccaaagca acgcggagta cgttgcatat gcaataaact acatctcggc gctctcacag 720
cgcccgatcg gggctctaac ctggtcgcaa ggcagcatag acgtgcaatg ggcgctgaaa 780
tactggccgt cgacgcgagc cgcggttaagc gatttcatgg ctgtgagtgg tgattccac 840
gggacgcttc ttgcgacgt gtgcgtgttc gccaaagccgt ttgctcgcc ggctgtgcag 900
cagcaggcgt atgataccag gtttattcgg gctctgcgtg gtgggggtgg ggattcggca 960

ttctaccga cgacgagcgt gtactctggg gatgacttta ttgtcaacc ccagagtggg 1020
 gactgggctt ctgcggccct gggggatgtg catggggctg gggtgtcaaa tgtacaggtg 1080
 caggttgctt gtgcaggggg tgctgccggg ggttcttatt cacattcggc tatgttggtt 1140
 aatccgttgg cgtatgcttt gttgtcgac gctttggttc atgatgggcc tgggaagttg 1200
 gagaggattg acctgatgc tatttgctgg gagtctcttg cgcttggtt ggatgtggat 1260
 gatttttgg gcatcgagga tgtgtcgaac gtgattgggg tgctgaatgt gttgtgtat 1320
 gggataata ggaatgagga gccaccgctt agggactatg ttactacta g 1371

<210> 22
 <211> 456
 <212> PRT
 <213> *Penicillium chrysogenum*

<400> 22

Met Arg Cys His Lys Val Leu Arg Phe Val Phe Phe Val Ser Ile Ser
 1 5 10 15

Leu Gly Ser Pro Val Pro Ser Tyr Thr Ser Lys Gly Ala Gln Asp Gly
 20 25 30

Pro Gly Ile Phe Asn Lys Leu Phe Asn Thr Ser Thr Ser Arg Ala Pro
 35 40 45

Phe Ser Thr Asp Ile Tyr Gln Glu Leu Ser Gln Leu Gln Ala Lys Ile
 50 55 60

Ser Asp Ile Ala Thr Gly Lys Ile Lys Pro Val Ser Thr Ile Glu Lys
 65 70 75 80

Gly Leu Ser Val Leu Ser Ser Ile Pro His Asp Asn Asn Arg Thr Ser
 85 90 95

Leu Gln Asn Ala Ile Asp Ile Val Ser Leu Gly Leu Val Pro Ser Ser

100 105 110

Ile Thr Asp Ile Leu Asn Gly Ile Thr Asn His Glu Ile Asn Ser Ile
115 120 125

Ala Asn Asn Asn Thr Lys Asn Pro Thr Pro Arg Ile His Pro Thr Arg
130 135 140

Ser Phe Glu Asp Ala Pro Tyr Asp Ile Pro Glu Glu Arg Leu Arg Ser
145 150 155 160

Ala Ile Tyr Ile Pro Pro Ala Phe Ser Tyr Gly Glu Asn Asn Lys Ile
165 170 175

Pro Val Leu Leu Val Pro Gly Thr Ala Asp Pro Ala Gly Ser Thr Tyr
180 185 190

Tyr Phe Ser Tyr Ala Lys Leu Phe Thr Ala Asn Pro His Thr Asp Pro
195 200 205

Val Trp Val Asn Ile Pro Glu Asn Ser Leu Gly Asp Ile Gln Ser Asn
210 215 220

Ala Glu Tyr Val Ala Tyr Ala Ile Asn Tyr Ile Ser Ala Leu Ser Gln
225 230 235 240

Arg Pro Ile Gly Val Leu Thr Trp Ser Gln Gly Ser Ile Asp Val Gln
245 250 255

Trp Ala Leu Lys Tyr Trp Pro Ser Thr Arg Ala Ala Val Ser Asp Phe
260 265 270

Met Ala Val Ser Gly Asp Phe His Gly Thr Leu Leu Ala Thr Leu Cys
275 280 285

Val Phe Ala Lys Pro Phe Cys Ser Pro Ala Val Gln Gln Gln Ala Tyr

290 295 300

Asp Thr Arg Phe Ile Arg Ala Leu Arg Gly Gly Gly Gly Asp Ser Ala
305 310 315 320

Phe Val Pro Thr Thr Ser Val Tyr Ser Gly Asp Asp Phe Ile Val Gln
 325 330 335

Pro Gln Ser Gly Asp Trp Ala Ser Ala Ala Leu Gly Asp Val His Gly
 340 345 350

Val Gly Val Ser Asn Val Gln Val Gln Val Ala Cys Ala Gly Gly Ala
 355 360 365

Ala Gly Gly Ser Tyr Ser His Ser Ala Met Leu Val Asn Pro Leu Ala
 370 375 380

Tyr Ala Leu Phe Val Asp Ala Leu Val His Asp Gly Pro Gly Lys Leu
385 390 395 400

Glu Arg Ile Asp Leu Asp Ala Ile Cys Gly Glu Ser Leu Ala Pro Gly
 405 410 415

Leu Asp Val Asp Asp Phe Leu Gly Ile Glu Asp Val Ser Asn Val Ile
 420 425 430

Gly Val Leu Asn Val Leu Leu Tyr Gly Tyr Asn Arg Asn Glu Glu Pro
 435 440 445

Pro Leu Arg Asp Tyr Val His Tyr
 450 455

<210> 23

<211> 1200

<212> DNA

<213> *Penicillium chrysogenum*

<400> 23

atggacacta cttccaagc cgccatcgac acaggcaaga tcaacggcgc ttagtctgt 60
 gccactgatg cccaaggcca ctctgtctac aacaaggcaa ccggagagcg cacgtactc 120
 tcaggcgaga agcaaccaca gcagctcgat gatgtgctgt acctagcctc agccacaaaa 180
 ctgatcacia ccatcgccgc cctccagtgc gtcgaagatg gcctactaag cctagacggc 240
 gatctgtcct ctatcgcccc agagctcgcg gcaaagtatg tcctactgg ctttaccgac 300
 gatgaaagcc cgctggacga tccaccagcc cgccccatca cctcaagat gctgcttaca 360
 cacagctcgg gcacctcta ccatttctg gacccgtcca tcgccaagtg gcgtgcgcag 420
 tatgccaatc ctgagaatga aaaacctcgt ctctgtgagg agatgttcac ctaccgctc 480
 agcttcagc ccggtaccgg ctggatgtac ggacccggtc ttgactgggc tggccgtgtg 540
 gtggagcgcg ttactggtgg caccttgatg gagttcatgc agaagcgcat cttgatccg 600
 ctcggtatta cagattctca gttctaccct gttacccgtg aggatctcg agcccgactc 660
 gtcgacctta accccagtga ccccggtgct ctggtagtg ccgtgatcgg cgggtggcggc 720
 gagatgaact tgcggggccg tggcgcttt ggtggtcacg ggtgttctt gaccggcttg 780
 gattttgta aaattctgcg ctgctgtctg gctaagatg gcatgttct caagccagct 840
 gccgtcgaca atatgttcca gcaacacctt ggtcctgaag cggcggcaag ccaccgagct 900
 gcgcttgcta gtcctctagg gcccttttc cgcgtcggga cagaccgga aacgaagggt 960
 ggctatgggt tgggcggtt gttgacgctt gaggatgtg atggctgga tggcgagcgg 1020
 acgttgactt ggggcggtgg ctgacgctc acttgggtca ttgatcgga gaacaacctc 1080
 tgtggcgttg gcgctatcca ggctgtgctg ccggtcgatg gagacttgat ggccgatctg 1140
 aagcaaacct tccgcatga tatttaccgc aaatatagcg cgtggaaggg tcagcagtag 1200

<210> 24

<211> 399

<212> PRT

<213> *Penicillium chrysogenum*

<400> 24

Met Asp Thr Thr Phe Gln Ala Ala Ile Asp Thr Gly Lys Ile Asn Gly
 1 5 10 15

Ala Val Val Cys Ala Thr Asp Ala Gln Gly His Phe Val Tyr Asn Lys
 20 25 30

Ala Thr Gly Glu Arg Thr Leu Leu Ser Gly Glu Lys Gln Pro Gln Gln
 35 40 45

Leu Asp Asp Val Leu Tyr Leu Ala Ser Ala Thr Lys Leu Ile Thr Thr
 50 55 60

Ile Ala Ala Leu Gln Cys Val Glu Asp Gly Leu Leu Ser Leu Asp Gly
 65 70 75 80

Asp Leu Ser Ser Ile Ala Pro Glu Leu Ala Ala Lys Tyr Val Leu Thr
 85 90 95

Gly Phe Thr Asp Asp Glu Ser Pro Leu Asp Asp Pro Pro Ala Arg Pro
 100 105 110

Ile Thr Leu Lys Met Leu Leu Thr His Ser Ser Gly Thr Ser Tyr His
 115 120 125

Phe Leu Asp Pro Ser Ile Ala Lys Trp Arg Ala Gln Tyr Ala Asn Pro
 130 135 140

Glu Asn Glu Lys Pro Arg Leu Val Glu Glu Met Phe Thr Tyr Pro Leu
 145 150 155 160

Ser Phe Gln Pro Gly Thr Gly Trp Met Tyr Gly Pro Gly Leu Asp Trp
 165 170 175

Ala Gly Arg Val Val Glu Arg Val Thr Gly Gly Thr Leu Met Glu Phe
 180 185 190

Met Gln Lys Arg Ile Phe Asp Pro Leu Gly Ile Thr Asp Ser Gln Phe
 195 200 205

Tyr Pro Val Thr Arg Glu Asp Leu Arg Ala Arg Leu Val Asp Leu Asn
 210 215 220

Pro Ser Asp Pro Gly Ala Leu Gly Ser Ala Val Ile Gly Gly Gly Gly
 225 230 235 240

Glu Met Asn Leu Arg Gly Arg Gly Ala Phe Gly Gly His Gly Leu Phe
 245 250 255

Leu Thr Gly Leu Asp Phe Val Lys Ile Leu Arg Ser Leu Leu Ala Asn
 260 265 270

Asp Gly Met Leu Leu Lys Pro Ala Ala Val Asp Asn Met Phe Gln Gln
 275 280 285

His Leu Gly Pro Glu Ala Ala Ala Ser His Arg Ala Ala Leu Ala Ser
 290 295 300

Pro Leu Gly Pro Phe Phe Arg Val Gly Thr Asp Pro Glu Thr Lys Val
 305 310 315 320

Gly Tyr Gly Leu Gly Gly Leu Leu Thr Leu Glu Asp Val Asp Gly Trp
 325 330 335

Tyr Gly Glu Arg Thr Leu Thr Trp Gly Gly Gly Leu Thr Leu Thr Trp
 340 345 350

Phe Ile Asp Arg Lys Asn Asn Leu Cys Gly Val Gly Ala Ile Gln Ala
 355 360 365

Val Leu Pro Val Asp Gly Asp Leu Met Ala Asp Leu Lys Gln Thr Phe
 370 375 380

Arg His Asp Ile Tyr Arg Lys Tyr Ser Ala Trp Lys Gly Gln Gln
 385 390 395

<210> 25

<211> 1179

<212> DNA

<213> *Aspergillus niger*

<400> 25

atgacttcgt ttgaagagaa ggtaaacttg ctccataaaa ctgattatgt ctttccctt 60

ctgtatacgt actgcttgct tacaccatac aaccaagggt ccttgacta tgctaaggca 120

tttgagagg aatctataga atccaccgat accgatgccg tgcattgggt ggccctctgt 180

accaaattgg tgactacat tgacgaatg cagtgtgtcg agcgcggtct actagacctg 240

gatggagatg tcgccaacgt attacgggag tgggcgagtc ctcaaactt gacgggcttc 300

gacgaaaatg ataactctat ctttcgggca gccaccaaac ctattactct acgacgcatg 360

ttaaccact ccagtggat ggggtacttc tcatggatc ctctcatgac tcgttatcac 420

gagctgcagg gaagcccacc cgtgggccag acattacacc aataccaatt ctactcttc 480

gaaccgggtg aacgatggat gtattcacct ggcatgact gggcaggagt agcagttgag 540

cgagtcactt caatgaagct aggcgactat ttgcagcgcc atgttttga tgtgtttcc 600

gtgaaggatg caacgttcca tctcgagcag agagaagacc tacgagcccg caaggtaaaa 660

gcttgacgc gaacagatca aagactggaa gaagagaaga atccaactt cctcgacccc 720

attgctgaag atgtaggagg aggcggtcta tatacaaccg tgagcgaaat gctcaaaatt 780

tgtcaaggca tacttacggc acagttactg cgtcccgaga ccctaagga gatgttcaa 840

cctcatctgg agagtgtga gggcctcgaa aaaccggaag attattcgtt gccgtcgcgc 900

aatgccatat ggaatgctat cccatgtgac acaccggtgg atttgggat cggcggcctg 960

ctcaacagat ccagactccc gcagggtcga gaagcatatt cgctctcgtg gtcgggaaaa 1020

ccaaattgtt actggtggat cgacatcaaa aaaggggttg ctgggatata ccttctcag 1080

cttataccga ccggagatca aagtgcatt gaactgctga ctgagttcga aagatgggtg 1140

tactcgcgta tagagaatct ggattgcgca gcaaagtag 1179

<210> 26

<211> 392

<212> PRT

<213> *Aspergillus niger*

<400> 26

Met Thr Ser Phe Glu Glu Lys Val Asn Leu Leu His Lys Thr Asp Tyr
1 5 10 15

Val Phe Ser Leu Leu Tyr Thr Tyr Cys Leu Leu Thr Pro Tyr Asn Gln
20 25 30

Gly Ser Leu His Tyr Ala Lys Ala Phe Gly Glu Glu Ser Ile Glu Ser
35 40 45

Thr Asp Thr Asp Ala Val His Trp Val Ala Ser Cys Thr Lys Leu Val
50 55 60

Thr Thr Ile Ala Val Met Gln Cys Val Glu Arg Gly Leu Leu Asp Leu
65 70 75 80

Asp Gly Asp Val Ala Asn Val Leu Arg Glu Trp Ala Ser Pro Gln Ile
85 90 95

Leu Thr Gly Phe Asp Glu Asn Asp Asn Pro Ile Phe Arg Ala Ala Thr
100 105 110

Lys Pro Ile Thr Leu Arg Arg Met Leu Thr His Ser Ser Gly Met Gly
115 120 125

Tyr Phe Phe Met Asp Pro Leu Met Thr Arg Tyr His Glu Leu Gln Gly
130 135 140

Ser Pro Pro Val Val Gln Thr Leu His Gln Tyr Gln Phe Leu Leu Phe

145 150 155 160

Glu Pro Gly Glu Arg Trp Met Tyr Ser Pro Gly Ile Asp Trp Ala Gly
 165 170 175

Val Ala Val Glu Arg Val Thr Ser Met Lys Leu Gly Asp Tyr Leu Gln
 180 185 190

Arg His Val Phe Asp Val Val Ser Val Lys Asp Ala Thr Phe His Leu
 195 200 205

Glu Gln Arg Glu Asp Leu Arg Ala Arg Lys Val Lys Ala Trp Thr Arg
 210 215 220

Thr Asp Gln Arg Leu Glu Glu Glu Lys Asn Pro Ile Phe Leu Asp Pro
 225 230 235 240

Ile Ala Glu Asp Val Gly Gly Gly Gly Leu Tyr Thr Thr Val Ser Glu
 245 250 255

Met Leu Lys Ile Cys Gln Gly Ile Leu Thr Ala Gln Leu Leu Arg Pro
 260 265 270

Glu Thr Leu Lys Glu Met Phe Gln Pro His Leu Glu Ser Val Glu Gly
 275 280 285

Leu Glu Lys Pro Glu Asp Tyr Ser Leu Pro Ser Arg Asn Ala Ile Trp
 290 295 300

Asn Ala Ile Pro Cys Asp Thr Pro Val Asp Phe Gly Ile Gly Gly Leu
 305 310 315 320

Leu Asn Arg Ser Arg Leu Pro Gln Gly Arg Glu Ala Tyr Ser Leu Ser
 325 330 335

Trp Ser Gly Lys Pro Asn Cys Tyr Trp Trp Ile Asp Ile Lys Lys Gly

340 345 350

Val Ala Gly Ile Tyr Leu Ser Gln Leu Ile Pro Thr Gly Asp Gln Ser
355 360 365

Ala Ile Glu Leu Leu Thr Glu Phe Glu Arg Trp Val Tyr Ser Arg Ile
370 375 380

Glu Asn Leu Asp Cys Ala Ala Lys
385 390

<210> 27
<211> 1143
<212> DNA
<213> *Aspergillus niger*

<400> 27
atggttgaaa aaggggaggc aaattatccc gaggccctgt tcgcgaggct ggaagactca 60
ttggagaagg ccatcgaaga tggcgtattt cccggtgtgg tagtggcagc gacaaataag 120
actggatctc tcgcatatgt taaggcattt gggagatctg cctgcaatga cacgggcgta 180
ccgtgtcgc cccaatccgt tatggccttt gcgtctatga ccaagcttat gacttgcac 240
gcggcggtgc aactagtga acgaggaact ataagtctag atgatgacgt tggacctcta 300
cttcccgatc tagcgcagtc aaagatactt acaggatggg acaaggaagg cataccgctc 360
ctgagagaac gccaaaatcc gattactctt cgacacctcc tgacgcacac tgccgggaca 420
ggctatgata tgacgaactc ggatctagcc aggttttcag cgtgtcaagg tcggcacatt 480
aactctggcg agacggtcaa ggaaagattt ggataccctt tgacttacga gccagggacg 540
agtttcgagt atggttgtgg tatcgactgg gttggtcagc tagtggaaaa actatctggt 600
caggatctag aaagttatat gcaggagaat atctggggtc cgcttgaat acaggaatt 660
accttctggc cagcagctaa gccagatatc cgcaataacc aaatccgcat ggcaattagg 720
gaacccaact cagaacgtgt gaccgacttc acaggacgat tcttaactga aggggtaaca 780
gaatgctttg gtagccaagg tgcttatggg gacatggaga gttacttaga aattctcttc 840

tcactactag ttgatgacga gaagctgttg agtcggcaga ccacagaaaa attgtttagc 900
 ccgcagctga gccactcaag caagcattcg ctgaatgaat acatcagaaa ccaccccccg 960
 aatgcgttca ttggcatatt cgataccgaa tccgaatatg actgggggct cggcggcata 1020
 ctgaccacgc aagatacgcc gtcggggcga cagaaggga cactaatctg gagcggaaag 1080
 ccaaatttat tctgggtatg tcctcccagc ctgcggatat tagttatagg tccactgacg 1140
 tag 1143

<210> 28
 <211> 380
 <212> PRT
 <213> *Aspergillus niger*

<400> 28

Met Val Glu Lys Gly Glu Ala Asn Tyr Pro Glu Ala Leu Phe Ala Arg
 1 5 10 15

Leu Glu Asp Ser Leu Glu Lys Ala Ile Glu Asp Gly Val Phe Pro Gly
 20 25 30

Val Val Val Ala Ala Thr Asn Lys Thr Gly Ser Leu Arg Tyr Val Lys
 35 40 45

Ala Phe Gly Arg Ser Ala Cys Asn Asp Thr Gly Val Pro Leu Ser Pro
 50 55 60

Gln Ser Val Met Ala Phe Ala Ser Met Thr Lys Leu Met Thr Cys Ile
 65 70 75 80

Ala Ala Leu Gln Leu Val Glu Arg Gly Thr Ile Ser Leu Asp Asp Asp
 85 90 95

Val Gly Pro Leu Leu Pro Asp Leu Ala Gln Ser Lys Ile Leu Thr Gly
 100 105 110

Trp Asp Lys Glu Gly Ile Pro Leu Leu Arg Glu Arg Gln Asn Pro Ile
 115 120 125

Thr Leu Arg His Leu Leu Thr His Thr Ala Gly Thr Gly Tyr Asp Met
 130 135 140

Thr Asn Ser Asp Leu Ala Arg Phe Ser Ala Cys Gln Gly Arg His Ile
 145 150 155 160

Asn Ser Gly Glu Thr Val Lys Glu Arg Phe Gly Tyr Pro Leu Thr Tyr
 165 170 175

Glu Pro Gly Thr Ser Phe Glu Tyr Gly Cys Gly Ile Asp Trp Val Gly
 180 185 190

Gln Leu Val Glu Lys Leu Ser Gly Gln Asp Leu Glu Ser Tyr Met Gln
 195 200 205

Glu Asn Ile Trp Gly Pro Leu Gly Ile Gln Gly Ile Thr Phe Trp Pro
 210 215 220

Ala Ala Lys Pro Asp Ile Arg Asn Asn Gln Ile Arg Met Ala Ile Arg
 225 230 235 240

Glu Pro Asn Ser Glu Arg Val Thr Asp Phe Thr Gly Arg Phe Leu Thr
 245 250 255

Glu Gly Val Thr Glu Cys Phe Gly Ser Gln Gly Ala Tyr Gly Asp Met
 260 265 270

Glu Ser Tyr Leu Glu Ile Leu Phe Ser Leu Leu Val Asp Asp Glu Lys
 275 280 285

Leu Leu Ser Arg Gln Thr Thr Glu Lys Leu Phe Ser Pro Gln Leu Ser
 290 295 300

His Ser Ser Lys His Ser Leu Asn Glu Tyr Ile Arg Asn His Pro Pro
 305 310 315 320

Asn Ala Phe Ile Gly Ile Phe Asp Thr Glu Ser Glu Tyr Asp Trp Gly
 325 330 335

Leu Gly Gly Ile Leu Thr Thr Gln Asp Thr Pro Ser Gly Arg Gln Lys
 340 345 350

Gly Thr Leu Ile Trp Ser Gly Lys Pro Asn Leu Phe Trp Val Cys Pro
 355 360 365

Pro Ser Leu Arg Ile Leu Val Ile Gly Pro Leu Thr
 370 375 380

<210> 29

<211> 1220

<212> DNA

<213> *Aspergillus niger*

<400> 29

atggcctgcg cgggacccga tagggacctt ccagggtgtag tggctatggt cgtggataaa 60
 aacggcgacc aagtatttgc ccacgccgct ggacagcgcg gccacggcca tgaccatctt 120
 gggcccatgc aaattgacac ttattcttgg atcgcgtcct gcacaaagct gatcactggt 180
 atcgcgtgta tgcagcttgt cgagcggggc gtgctgacac tcgacgatac cgaaatcgtc 240
 caacgccact gtccagagct tcgcatgtg cgtgtccttc aaccagacgg tcgcttggtt 300
 gagaagcaga gggatatcac gttgagaatg ctattgagtc atacagctgg gtttgatac 360
 tcattcatcg acgccaatct gcgggatcac aacaggccag cagggtataa tgagttctcg 420
 ggacaaaaga gggtttctc cagccgctaa tccatcagcc tggggaggcc tgggagtatg 480
 ggatcagtgt ggattgggcc gggttctctc tcgagcgagt taccggtcag accttcacg 540
 agtatatgca acagcacatc ttccaacctc tcaggttaac tcatatcca atgattccca 600
 atgaagcgaa ccaggcgaaa ttggcctgca tgcacgagc agtcagcaat ggccagctgt 660

atgttcggaa ggagcacccc ctcaacgct cactcgccat cggctatat cccaatgaca 720
 gcccacatc ctttgcttc agtggcggag cgggatgttt tcaacggca catgattact 780
 atcgaatctt atcgaccctc ctcaataacg gcacctgtcc tctaacgga acacagctac 840
 ttccaggga gactgttgac gagatgttcc gcaaccagat tctcatctg gccccgtca 900
 atggaaagca tatgccggct gcgaagcccg agtcacgac ggctgcgacg gggttacagc 960
 caacagtcga tggaatcgc caggggtggg gtctgacttt cctcctgagt ggaggtgata 1020
 caggtcgctc gatcgggaca gcgcagtgga cgggactgcc aaatctccga tgggtgtgtg 1080
 atcgggagaa tggggtggcc ggtattttt gcgcccagat tctaccgttc ggcatctga 1140
 aggcttttc tctggcagag gaaatcgaga ggcagggtta tgcagggtta agcgaggctc 1200
 agcggggaag acctggctag 1220

<210> 30
 <211> 405
 <212> PRT
 <213> *Aspergillus niger*

<400> 30

Met Ala Cys Ala Gly Pro Asp Arg Asp Leu Pro Gly Val Val Ala Met
 1 5 10 15

Val Val Asp Lys Asn Gly Asp Gln Val Phe Ala His Ala Ala Gly Gln
 20 25 30

Arg Gly His Gly His Asp His Leu Gly Pro Met Gln Ile Asp Thr Leu
 35 40 45

Phe Trp Ile Ala Ser Cys Thr Lys Leu Ile Thr Gly Ile Ala Cys Met
 50 55 60

Gln Leu Val Glu Arg Gly Val Leu Thr Leu Asp Asp Thr Glu Ile Val
 65 70 75 80

Gln Arg His Cys Pro Glu Leu Arg His Val Arg Val Leu Gln Pro Asp
 85 90 95

Gly Arg Leu Val Glu Lys Gln Arg Asp Ile Thr Leu Arg Met Leu Leu
 100 105 110

Ser His Thr Ala Gly Phe Gly Tyr Ser Phe Ile Asp Ala Asn Leu Arg
 115 120 125

Asp His Asn Arg Pro Ala Gly Tyr Asn Val Leu Gly Thr Lys Glu Gly
 130 135 140

Phe Leu Gln Pro Leu Ile His Gln Pro Gly Glu Ala Trp Glu Tyr Gly
 145 150 155 160

Ile Ser Val Asp Trp Ala Gly Phe Leu Leu Glu Arg Val Thr Gly Gln
 165 170 175

Thr Leu His Glu Tyr Met Gln Gln His Ile Phe Gln Pro Leu Arg Leu
 180 185 190

Thr His Ile Ser Met Ile Pro Asn Glu Ala Asn Gln Ala Lys Leu Ala
 195 200 205

Cys Met His Gln Arg Val Ser Asn Gly Gln Leu Tyr Val Arg Lys Glu
 210 215 220

His Pro Leu Gln Arg Ser Leu Ala Ile Gly Leu Tyr Pro Asn Asp Ser
 225 230 235 240

Pro Ser Ser Phe Cys Phe Ser Gly Gly Ala Gly Cys Phe Ser Thr Ala
 245 250 255

His Asp Tyr Tyr Arg Ile Leu Ser Thr Leu Leu Asn Asn Gly Thr Cys
 260 265 270

Pro Leu Ile Gly Thr Gln Leu Leu Ser Arg Glu Thr Val Asp Glu Met
 275 280 285

Phe Arg Asn Gln Ile Pro His Leu Ala Pro Leu Asn Gly Lys His Met
 290 295 300

Pro Ala Ala Lys Pro Glu Leu Thr Thr Ala Ala Thr Gly Leu Gln Pro
 305 310 315 320

Thr Val Asp Gly Asn Arg Gln Gly Trp Gly Leu Thr Phe Leu Leu Ser
 325 330 335

Gly Gly Asp Thr Gly Arg Ser Ile Gly Thr Ala Gln Trp Thr Gly Leu
 340 345 350

Pro Asn Leu Arg Trp Trp Cys Asp Arg Glu Asn Gly Val Ala Gly Ile
 355 360 365

Phe Cys Ala Gln Ile Leu Pro Phe Gly Asp Leu Lys Ala Phe Ser Leu
 370 375 380

Ala Glu Glu Ile Glu Arg Gln Val Tyr Ala Gly Leu Ser Glu Ala Gln
 385 390 395 400

Arg Gly Arg Pro Gly
 405

<210> 31

<211> 1488

<212> DNA

<213> *Aspergillus terreus*

<400> 31

atgaagggtt tctcggcct caccctgttg ccgttgctga cagcggccaa ccccatcggc 60

gttggtcca ttacaatga agcagcccct attctctctg ctgcaaatgc taaggaggtt 120

cccgactcct atatcgtcgt ttcaagaag catgtcaagg atgatgccgc cacggctcat 180

cacatgtggg tgcaggacat ccacgactct cagttcgccc gcaccgagct gaagaagcgg 240
 tcgtccttg gcttgggtga cgagatgtac ctcggcctca agaacacttt caatatcgct 300
 ggatcgttga tgggttattc gggtcacttc cacgaagacg tgatcgagca ggtccggaga 360
 catcctgatg tcgaatacat cgagaaggac tccgaagtcc acaccatgga ggaggtcacc 420
 gagaagaacg ccccttgggg tctggctcgt atctcgacc gtgacagcct ctcttcggt 480
 acctcaaca agtacctcta tgctccgaa ggcggtgagg gtgtgacgc ttacactatt 540
 gatactggta tcaacatcga ccatgtcgac ttgaaggtc gtgccacctg gggcaagact 600
 atccccagca atgatgagga tgccgatggt aacggccacg gcactcactg ctccggaacc 660
 atcgctggca agaagtatgg tgtcgccaag aaggccaacc tctatgccgt caaggttctc 720
 cgctccagtg gctctggcac gatgtccgat gtcgttcagg gtgtcgagtg ggccgtgcag 780
 tcgcacctta agaaggccaa agatgctaag gacggcaagg tgaagggatt caagggcagt 840
 gttgccaaca tgagtctcgg tggtggaag tccaagacct tcgaggatgc tgtcaacgca 900
 ggcgtggaag ccggtcttca ctctgccgtt gccgctggaa atgacaacgc tgacgcttgc 960
 gattactccc cggccgctgc tgagaatgcc gtgaccgtgg gtgcctccac cctggcggat 1020
 gagcgtgcgt acttctcaa ctacggcaag tgcaccgaca tcttcgcccc tggctttaac 1080
 atccagtcca cctggattgg aagcaagcat gccgtcaaca ccatttcggg cacttcgatg 1140
 gcctctctc acattgctgg ctgttggcc tacttcgtgt ctctccagcc ttcgcaggac 1200
 tctgccttg ctgtgtctga gcttactccc gccaaagtca agaagaatat catctctatt 1260
 gccaccagg gtgctctgtc tgacatcccc gccgataccc ccaacctcct tgcttgaac 1320
 ggtggtggct ctggcaacta ctctgagatc atcgccaacg gtggctacaa ggccggctcc 1380
 gactccatca agaaccgctt cgacggcctg gtggacaagg ctgagaagct gctttctgag 1440
 gagctcggcg ctatctacag cgagatccag gatgctgttg ttgcatag 1488

<210> 32

<211> 495

<212> PRT

<213> *Aspergillus terreus*

<400> 32

Met Lys Gly Phe Leu Gly Leu Thr Leu Leu Pro Leu Leu Thr Ala Ala
 1 5 10 15

Asn Pro Ile Gly Val Gly Ser Ile His Asn Glu Ala Ala Pro Ile Leu
 20 25 30

Ser Ala Ala Asn Ala Lys Glu Val Pro Asp Ser Tyr Ile Val Val Phe
 35 40 45

Lys Lys His Val Lys Asp Asp Ala Ala Thr Ala His His Met Trp Val
 50 55 60

Gln Asp Ile His Asp Ser Gln Phe Ala Arg Thr Glu Leu Lys Lys Arg
 65 70 75 80

Ser Leu Leu Gly Leu Gly Asp Glu Met Tyr Leu Gly Leu Lys Asn Thr
 85 90 95

Phe Asn Ile Ala Gly Ser Leu Met Gly Tyr Ser Gly His Phe His Glu
 100 105 110

Asp Val Ile Glu Gln Val Arg Arg His Pro Asp Val Glu Tyr Ile Glu
 115 120 125

Lys Asp Ser Glu Val His Thr Met Glu Glu Val Thr Glu Lys Asn Ala
 130 135 140

Pro Trp Gly Leu Ala Arg Ile Ser His Arg Asp Ser Leu Ser Phe Gly
 145 150 155 160

Thr Phe Asn Lys Tyr Leu Tyr Ala Ser Glu Gly Gly Glu Gly Val Asp
 165 170 175

Ala Tyr Thr Ile Asp Thr Gly Ile Asn Ile Asp His Val Asp Phe Glu
 180 185 190

Gly Arg Ala Thr Trp Gly Lys Thr Ile Pro Ser Asn Asp Glu Asp Ala
 195 200 205

Asp Gly Asn Gly His Gly Thr His Cys Ser Gly Thr Ile Ala Gly Lys
 210 215 220

Lys Tyr Gly Val Ala Lys Lys Ala Asn Leu Tyr Ala Val Lys Val Leu
 225 230 235 240

Arg Ser Ser Gly Ser Gly Thr Met Ser Asp Val Val Gln Gly Val Glu
 245 250 255

Trp Ala Val Gln Ser His Leu Lys Lys Ala Lys Asp Ala Lys Asp Gly
 260 265 270

Lys Val Lys Gly Phe Lys Gly Ser Val Ala Asn Met Ser Leu Gly Gly
 275 280 285

Gly Lys Ser Lys Thr Leu Glu Asp Ala Val Asn Ala Gly Val Glu Ala
 290 295 300

Gly Leu His Phe Ala Val Ala Ala Gly Asn Asp Asn Ala Asp Ala Cys
 305 310 315 320

Asp Tyr Ser Pro Ala Ala Ala Glu Asn Ala Val Thr Val Gly Ala Ser
 325 330 335

Thr Leu Ala Asp Glu Arg Ala Tyr Phe Ser Asn Tyr Gly Lys Cys Thr
 340 345 350

Asp Ile Phe Ala Pro Gly Leu Asn Ile Gln Ser Thr Trp Ile Gly Ser
 355 360 365

Lys His Ala Val Asn Thr Ile Ser Gly Thr Ser Met Ala Ser Pro His
 370 375 380

Ile Ala Gly Leu Leu Ala Tyr Phe Val Ser Leu Gln Pro Ser Gln Asp
 385 390 395 400

Ser Ala Phe Ala Val Ser Glu Leu Thr Pro Ala Lys Leu Lys Lys Asn
 405 410 415

Ile Ile Ser Ile Ala Thr Gln Gly Ala Leu Ser Asp Ile Pro Ala Asp
 420 425 430

Thr Pro Asn Leu Leu Ala Trp Asn Gly Gly Gly Ser Gly Asn Tyr Ser
 435 440 445

Glu Ile Ile Ala Asn Gly Gly Tyr Lys Ala Gly Ser Asp Ser Ile Lys
 450 455 460

Asn Arg Phe Asp Gly Leu Val Asp Lys Ala Glu Lys Leu Leu Ser Glu
 465 470 475 480

Glu Leu Gly Ala Ile Tyr Ser Glu Ile Gln Asp Ala Val Val Ala
 485 490 495

<210> 33

<211> 1212

<212> DNA

<213> *Aspergillus terreus*

<400> 33

atgcagtcca tcaagcgac tctctgctc ctgggagctg tcctccccgc ggtcctagct 60

ggtccaatct tccacaccg tcgcgcgct accactattc ctggcaagta cattgtcacc 120

ttcaagtcgg atgtcgacca ggccgcgatt gacaagcaca ccgctgggc gaccgatatc 180

cacaagcgca acctgcagcg gcgcgactcg tccgaggagg acctcccat tggcattgag 240

cggaacttca agatcaacaa gtttgccgct tactcgggct ccttgatga ggataccatt 300

ggcagattc gccagagcga cgaggtcgcc gcggtcgagg aagaccaggt ctggcacctg 360
 ttgacctga ccaccacgtc ggacgcccc tggggattgg gaagcatctc ccacaagggt 420
 cagcccagca cggactacat ctatgacacc aacggcggcg agggcaccta cgcttacgtc 480
 gtagacaccg gcatcaacgt ggaccacgag gaatttgagg gccgtgagag tctcgctac 540
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<210> 34

<211> 403

<212> PRT

<213> *Aspergillus terreus*

<400> 34

Met Gln Ser Ile Lys Arg Thr Leu Leu Leu Leu Gly Ala Val Leu Pro
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Ala Val Leu Ala Gly Pro Ile Phe Pro His Arg Arg Ala Pro Thr Thr
 20 25 30

Ile Pro Gly Lys Tyr Ile Val Thr Phe Lys Ser Asp Val Asp Gln Ala
 35 40 45

Ala Ile Asp Lys His Thr Ala Trp Ala Thr Asp Ile His Lys Arg Asn
 50 55 60

Leu Gln Arg Arg Asp Ser Ser Glu Glu Asp Leu Pro Ile Gly Ile Glu
 65 70 75 80

Arg Asn Phe Lys Ile Asn Lys Phe Ala Ala Tyr Ser Gly Ser Phe Asp
 85 90 95

Glu Asp Thr Ile Ala Gln Ile Arg Gln Ser Asp Glu Val Ala Ala Val
 100 105 110

Glu Glu Asp Gln Val Trp His Leu Phe Asp Leu Thr Thr Gln Ser Asp
 115 120 125

Ala Pro Trp Gly Leu Gly Ser Ile Ser His Lys Gly Gln Pro Ser Thr
 130 135 140

Asp Tyr Ile Tyr Asp Thr Asn Gly Gly Glu Gly Thr Tyr Ala Tyr Val
 145 150 155 160

Val Asp Thr Gly Ile Asn Val Asp His Glu Glu Phe Glu Gly Arg Ala
 165 170 175

Ser Leu Ala Tyr Asn Ala Ala Gly Gly Gln His Val Asp Gly Val Gly
 180 185 190

His Gly Thr His Val Ser Gly Thr Ile Gly Gly Lys Thr Tyr Gly Val
 195 200 205

Ala Lys Lys Ala Asn Leu Leu Ser Val Lys Val Phe Val Gly Glu Ser
 210 215 220

Ser Ser Thr Ser Ile Ile Leu Asp Gly Phe Asn Trp Ala Ala Asn Asp
 225 230 235 240

Ile Val Ser Lys Lys Arg Thr Gly Lys Ala Ala Ile Asn Met Ser Leu
 245 250 255

Gly Gly Gly Tyr Ser Lys Ala Phe Asn Asp Ala Val Glu Asn Ala Phe
 260 265 270

Asn Glu Gly Val Leu Ser Ile Val Ala Ala Gly Asn Glu Asn Thr Asp
 275 280 285

Ala Ser Ser Thr Ser Pro Ala Ser Ala Pro Asp Ala Phe Thr Val Ala
 290 295 300

Ala Ile Asn Val Asn Asn Thr Arg Ala Tyr Phe Ser Asn Tyr Gly Ser
 305 310 315 320

Val Val Asp Ile Phe Ala Pro Gly Gln Asn Ile Leu Ser Ala Trp Ile
 325 330 335

Gly Ser Asn Thr Ala Thr Asn Thr Ile Ser Gly Thr Ser Met Ala Thr
 340 345 350

Pro His Ile Val Gly Leu Ser Ile Tyr Leu Met Ser Leu Glu Asp Leu
 355 360 365

Ser Ser Pro Lys Ala Val Ser Asp Arg Ile Lys Glu Leu Ala Thr Arg
 370 375 380

Gly Val Val Ser Asn Val Ala Gly Ser Pro Asn Leu Leu Ala Tyr Asn
 385 390 395 400

Gly Asn Ala

<210> 35
 <211> 1902
 <212> DNA
 <213> *Penicillium citrinum*

<400> 35
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 ctacagctg cctctcccg tagtgtggag tctatccaca atggagcagc tcccatcatc 240
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 gacacttccg ctgctgccgc tcatcatagc tgggtgcagg acatccactc tgctgtcaac 360
 ggacgtatgg agctgaagaa gcgcggccctt ttgggttcg acaccgacgc ttccttgggt 420
 gttgaagcatt cattccacgt agctggatca ttgatgggtt atgctgggtca ttccatgaa 480
 gatgtcattg aacagggtccg ccggcatccg gatgtcgact acattgagaa ggactctgag 540
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<210> 36
 <211> 457
 <212> PRT
 <213> *Penicillium citrinum*

<400> 36

Met Lys Gly Phe Leu Gly Leu Ala Leu Leu Pro Leu Leu Thr Ala Ala
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Ser Pro Val Ser Val Glu Ser Ile His Asn Gly Ala Ala Pro Ile Ile
 20 25 30

Ser Ser Met Asn Ser Gln Glu Ile Pro Asp Ser Tyr Ile Val Val Phe
 35 40 45

Lys Lys His Val Asp Thr Ser Ala Ala Ala Ala His His Ser Trp Val
 50 55 60

Gln Asp Ile His Ser Ala Val Asn Gly Arg Met Glu Leu Lys Lys Arg

65

70

75

80

Gly Leu Phe Gly Phe Asp Thr Asp Ala Phe Leu Gly Val Lys His Ser
 85 90 95

Phe His Val Ala Gly Ser Leu Met Gly Tyr Ala Gly His Phe His Glu
 100 105 110

Asp Val Ile Glu Gln Val Arg Arg His Pro Asp Val Asp Tyr Ile Glu
 115 120 125

Lys Asp Ser Glu Val His His Phe Asp Ser Pro Ser Val Glu Lys Asn
 130 135 140

Ala Pro Trp Gly Leu Ala Arg Ile Ser His Arg Asp Ser Leu Ser Phe
 145 150 155 160

Gly Thr Phe Asn Lys Tyr Leu Tyr Ala Glu Asp Gly Gly Glu Gly Val
 165 170 175

Asp Ala Tyr Val Ile Asp Thr Gly Thr Asn Thr Asp His Val Asp Phe
 180 185 190

Glu Gly Arg Ala Ser Trp Gly Lys Thr Ile Pro Gln Gly Asp Glu Asp
 195 200 205

Val Asp Gly Asn Gly His Gly Thr His Cys Ser Gly Thr Ile Ala Gly
 210 215 220

Lys Lys Tyr Gly Val Ala Lys Lys Ala Asn Val Tyr Ala Val Lys Val
 225 230 235 240

Leu Arg Ser Asn Gly Ser Gly Thr Met Ser Asp Val Val Lys Gly Val
 245 250 255

Glu Trp Ala Ala Glu Ala His Ile Lys Lys Ser Lys Ala Ala Lys Asp

260 265 270

Gly Lys Ala Lys Gly Phe Lys Gly Ser Val Ala Asn Met Ser Leu Gly
275 280 285

Gly Gly Ser Ser Arg Thr Leu Asp Leu Ala Val Asn Ala Ala Val Asp
290 295 300

Ala Gly Met His Phe Ala Val Ala Ala Gly Asn Asp Asn Ala Asp Ala
305 310 315 320

Cys Asn Tyr Ser Pro Ala Ala Ala Glu Lys Ala Val Thr Val Gly Ala
325 330 335

Ser Thr Leu Ala Asp Glu Arg Ala Tyr Phe Ser Asn Tyr Gly Lys Cys
340 345 350

Thr Asp Ile Phe Ala Pro Gly Leu Asn Ile Leu Ser Thr Trp Ile Gly
355 360 365

Ser Lys Tyr Ala Val Asn Thr Ile Ser Gly Thr Ser Met Ala Ser Pro
370 375 380

His Ile Ala Gly Leu Leu Ala Tyr Tyr Val Ser Leu Gln Pro Ser Asp
385 390 395 400

Asp Ser Ala Phe Ala Val Glu Lys Ile Thr Pro Lys Lys Leu Lys Glu
405 410 415

Ala Leu Ile Thr Val Ala Thr Ser Gly Ala Leu Thr Asp Ile Pro Ser
420 425 430

Asp Thr Pro Asn Leu Leu Ala Trp Asn Gly Gly Gly Ser Ser Asn Tyr
435 440 445

Thr Asp Ile Val Ala Gln Gly Gly Tyr

450

455

<210> 37

<211> 1139

<212> DNA

<213> *Penicillium citrinum*

<400> 37

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agcctctcct tcggtacctt taacaagtac ctctacgccg aggatggtgg tgagggtgtt 120

gatgcgtacg tcatcgacac cggcaccaac accgaccatg ttgactttga aggtcgtgcc 180

aactggggca agaccatccc cgaaggatgat gaagatgtag atggcaatgg tcacggtact 240

cactgctctg gtactattgc cgtaagaaa tacggtgttg ctaagaaggc caacgtctac 300

gccgtcaagg tcctccgctc caacggctcg ggtaccatgt ccgacgtcgt caaagggtgc 360

gagtgggagg ccgagggtca catcaagaag gccaaggctg gcaagaaggg ctcaagggt 420

agtgttgcca acatgagtct tgggtggcgt agtccccgca ctctcgacct cgccgtcaac 480

gctgccgttg atgctggtat tcacttcgcc gtcgctgctg gcaatgacaa cgctgatgcc 540

tgcaactact cccccgctgc cgctgagaac gccgtcactg tcggtgcctc cactctcgcc 600

gatgagcgtg ctactctc caactacgga aagtgcactg acatctttgc tcctggcttg 660

aacattctgt caacctggat tggcagcaag tacgctgtca acaccatctc tggtaacctc 720

atggcctcgc cccacattgc tggctgctg gcctactatg tctccctcca accctccgat 780

gactctgcct ttgcggtcga gaagatcact cccaagaagc tcaaggaggc tctcatcact 840

gttgccacct ctggtgctct cactgatatc ccctctgata cccccaacct tctgccttg 900

aacggcggtg gttcttcaa ctacaccgac attgtcgccc aggttggtta caaggccggt 960

tctaccgtcg aggacttga ggagcatatt cataagctcg tcaaccacgc cgaggaggtt 1020

atgcacaagg agcttggtgc tatctacagc gagatcaagg acgctgttgc cgtttagagt 1080

agacgacttg gccccgtctg cgacgggctc ttacatggg catttggatg ggttggtt 1139

<210> 38
 <211> 358
 <212> PRT
 <213> *Penicillium citrinum*

<400> 38

Asp Ser Pro Ser Val Glu Lys Asn Ala Pro Trp Gly Leu Ala Arg Ile
 1 5 10 15

Ser His Arg Asp Ser Leu Ser Phe Gly Thr Phe Asn Lys Tyr Leu Tyr
 20 25 30

Ala Glu Asp Gly Gly Glu Gly Val Asp Ala Tyr Val Ile Asp Thr Gly
 35 40 45

Thr Asn Thr Asp His Val Asp Phe Glu Gly Arg Ala Asn Trp Gly Lys
 50 55 60

Thr Ile Pro Glu Gly Asp Glu Asp Val Asp Gly Asn Gly His Gly Thr
 65 70 75 80

His Cys Ser Gly Thr Ile Ala Gly Lys Lys Tyr Gly Val Ala Lys Lys
 85 90 95

Ala Asn Val Tyr Ala Val Lys Val Leu Arg Ser Asn Gly Ser Gly Thr
 100 105 110

Met Ser Asp Val Val Lys Gly Val Glu Trp Ala Ala Glu Ala His Ile
 115 120 125

Lys Lys Ala Lys Ala Gly Lys Lys Gly Phe Lys Gly Ser Val Ala Asn
 130 135 140

Met Ser Leu Gly Gly Gly Ser Ser Arg Thr Leu Asp Leu Ala Val Asn
 145 150 155 160

Ala Ala Val Asp Ala Gly Ile His Phe Ala Val Ala Ala Gly Asn Asp

165

170

175

Asn Ala Asp Ala Cys Asn Tyr Ser Pro Ala Ala Ala Glu Asn Ala Val
 180 185 190

Thr Val Gly Ala Ser Thr Leu Ala Asp Glu Arg Ala Tyr Phe Ser Asn
 195 200 205

Tyr Gly Lys Cys Thr Asp Ile Phe Ala Pro Gly Leu Asn Ile Leu Ser
 210 215 220

Thr Trp Ile Gly Ser Lys Tyr Ala Val Asn Thr Ile Ser Gly Thr Ser
 225 230 235 240

Met Ala Ser Pro His Ile Ala Gly Leu Leu Ala Tyr Tyr Val Ser Leu
 245 250 255

Gln Pro Ser Asp Asp Ser Ala Phe Ala Val Glu Lys Ile Thr Pro Lys
 260 265 270

Lys Leu Lys Glu Ala Leu Ile Thr Val Ala Thr Ser Gly Ala Leu Thr
 275 280 285

Asp Ile Pro Ser Asp Thr Pro Asn Leu Leu Ala Trp Asn Gly Gly Gly
 290 295 300

Ser Ser Asn Tyr Thr Asp Ile Val Ala Gln Gly Gly Tyr Lys Ala Gly
 305 310 315 320

Ser Thr Val Glu Asp Phe Glu Glu His Ile His Lys Leu Val Asn His
 325 330 335

Ala Glu Glu Val Met His Lys Glu Leu Gly Ala Ile Tyr Ser Glu Ile
 340 345 350

Lys Asp Ala Val Ala Val

355

<210> 39

<211> 1420

<212> DNA

<213> *Penicillium citrinum*

<400> 39

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 ctgcgactc ttgcagtcgt cgatgctggt actctcctta ccgccagcaa caccgacgca 120
 gtaattccta gctcctatat tgttggtatg aacgatgacg ttagcaccgc tgagttcaac 180
 acgcatcgtg aatgggctac aaatgttcat gctcgccctt ctgccgtaa aaatggggag 240
 actggaccag gaaagcattt cgaaatcaat ggtctcaaag gatatactgc tagcttcgac 300
 gagagtactg ctaaagatat tgccaatgac ccggcgggtca agtacatcga accagacatg 360
 attgtgaatg caaccgcgaa cgtgggtcaa tccaatgttc cttcatgggg tcttgctcgc 420
 atatctagca agagaactgg taccaccagc tatacatatg attctactgc cggtgagggc 480
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 gctaaatggg gtaccaacgt tgttgataat gataataccg acggtaatgg acatggcact 600
 cacactgcgt ctactcggcg cggtagcaag tacggtgttg caaaaaaggc cactctcgtc 660
 gctgtcaagg tccttggtgc cgatgggtct ggcactaact caggtgtcat ctctggtatg 720
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 tctctcggcg gcgagtttc caaggctgtg aatgacgccg ctgccaatgt tgtaaagtcc 840
 ggtatcttcc tctccgttgc tgctggtaat gaggccgaga atgcgagcaa cagttctcct 900
 gcgtctgctg cggaagtatg cactatcgcg gccttacta gcacagatgg cagcgcttca 960
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ctctacaatg gcatcaacgt ctaatgaata tccgtatggg gcagcggatg atttaagcat 1260

gccgctttga attcgcatat ctatattcat aggtgggctt tccgaagtg aaatatgtta 1320

tgagtgtcaa aatatctggt cataggtgca gctcagctta ctattgtga atttgcaga 1380

ggattcttt gaatgcatga aatatttga taaaaaaaaa 1420

<210> 40

<211> 397

<212> PRT

<213> *Penicillium citrinum*

<400> 40

Met Gly Phe Leu Lys Val Leu Ala Thr Ser Leu Ala Thr Leu Ala Val
1 5 10 15

Val Asp Ala Gly Thr Leu Leu Thr Ala Ser Asn Thr Asp Ala Val Ile
20 25 30

Pro Ser Ser Tyr Ile Val Val Met Asn Asp Asp Val Ser Thr Ala Glu
35 40 45

Phe Asn Thr His Arg Glu Trp Ala Thr Asn Val His Ala Arg Leu Ser
50 55 60

Arg Arg Lys Asn Gly Glu Thr Gly Pro Gly Lys His Phe Glu Ile Asn
65 70 75 80

Gly Leu Lys Gly Tyr Thr Ala Ser Phe Asp Glu Ser Thr Ala Lys Asp
85 90 95

Ile Ala Asn Asp Pro Ala Val Lys Tyr Ile Glu Pro Asp Met Ile Val
100 105 110

Asn Ala Thr Ala Asn Val Val Gln Ser Asn Val Pro Ser Trp Gly Leu
115 120 125

Ala Arg Ile Ser Ser Lys Arg Thr Gly Thr Thr Ser Tyr Thr Tyr Asp
 130 135 140

Ser Thr Ala Gly Glu Gly Val Val Phe Tyr Gly Val Asp Thr Gly Ile
 145 150 155 160

Asp Ile Ser His Ser Asp Phe Gly Gly Arg Ala Lys Trp Gly Thr Asn
 165 170 175

Val Val Asp Asn Asp Asn Thr Asp Gly Asn Gly His Gly Thr His Thr
 180 185 190

Ala Ser Thr Ala Ala Gly Ser Lys Tyr Gly Val Ala Lys Lys Ala Thr
 195 200 205

Leu Val Ala Val Lys Val Leu Gly Ala Asp Gly Ser Gly Thr Asn Ser
 210 215 220

Gly Val Ile Ser Gly Met Asp Trp Ala Val Lys Asp Ala Lys Ser Arg
 225 230 235 240

Gly Ala Asn Gly Lys Tyr Val Met Asn Met Ser Leu Gly Gly Glu Phe
 245 250 255

Ser Lys Ala Val Asn Asp Ala Ala Ala Asn Val Val Lys Ser Gly Ile
 260 265 270

Phe Leu Ser Val Ala Ala Gly Asn Glu Ala Glu Asn Ala Ser Asn Ser
 275 280 285

Ser Pro Ala Ser Ala Ala Glu Val Cys Thr Ile Ala Ala Ser Thr Ser
 290 295 300

Thr Asp Gly Ser Ala Ser Phe Thr Asn Phe Gly Ser Val Val Asp Leu
 305 310 315 320

Tyr Ala Pro Gly Gln Ser Ile Thr Ala Ala Tyr Pro Gly Gly Gly Ser
 325 330 335

Lys Thr Leu Ser Gly Thr Ser Met Ala Ala Pro His Val Ala Gly Val
 340 345 350

Ala Ala Tyr Leu Met Ala Leu Glu Gly Val Ser Ala Gly Asn Ala Cys
 355 360 365

Ala Arg Ile Val Gln Leu Ala Thr Ser Ser Ile Ser Arg Ala Pro Ser
 370 375 380

Gly Thr Thr Ser Lys Leu Leu Tyr Asn Gly Ile Asn Val
 385 390 395

<210> 41

<211> 5001

<212> DNA

<213> Streptomyces carbophilus

<400> 41

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catcaggccc ttcacccgcc gctgcacggt ccgcaggccc agatccagct gcttggcggc 180

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gaccggtgtg cccgtcacca gcgcgcacac ctgcgcggcg gcgcccagct gcaactggtg 660

gaagcgggtg gccaccgcgc tcgccccgt caccacctcg acgaggctcg gcacggcggg 720
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 gagcgccgct tcaacgaggg cgccaccgac cagctctacc ggtgcgccc cggcgcgtac 3240
 ttctgtcct ccttcgtcac ctccgccgac cccggcgacg ccaccggcg gaacgtcggc 3300
 tcggtcagct acctcggccg accgcagctc gacctgaaga aggacaccac cctcgtcctg 3360
 gacgcccgtg ccgcgcaccg gctctcgggt cggaccgacc ggccgagcga ggtccgcacc 3420
 acgacgtcgc gttcgcggc ctctggggc ggccagtggc tccactcggg ctgatcacc 3480
 ggatcccggc tgatcgacga ctactacgcg gacgtccggg gcggcgccc caccggcgac 3540

ttcgagttcg gcagctactg gcggggtac gccccgcagt tcgagaagct cgccgtgacc 3600
 ggcgggcccg cgctgcaccc gctcaccgag agcgctgggt ccgacaacct cgacggcacc 3660
 ggcagcgcg cgctcgtcga cgcgggcccg ggcaccccg acgagctcaa ggccgcgggg 3720
 gtcggcgggga agatcgccct cgtcgcgggt ccggacgacc ccgactcgt cgccaccctc 3780
 gccagggacg ccaaggcggc gggcgccacg gcgctcgccg tgcaccgccc ctcgaacggc 3840
 cgctggctgc cgctgtacgg ctccgcccga gggcgctgc ccaccctgc catcgaggcg 3900
 agcgaggcgt cggacctgc gggcggtg gcgcacggcc ccgtaccct cgctggaag 3960
 gcgacggcca agagcggcta tgtctaac ctgggctcc aggaggacgg cggcatcggc 4020
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 tcgatgggag tgccggccga ctctcgtac ggcgtgagcg cccaccgccc cgtcggcggc 4140
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 tacaccgagg gcggcaccac ctgggaccac ttgtctct ccagctccc ctccggcgag 4260
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 gaactcgtca gcgacaacca gaagatcggg ccgtccgcag cggcttgaa gcgtctcag 4620
 gaggtcgtga cgagctgaa gtccgctcg cacctcgtcg agagcggtt ctctcaggcg 4680
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 ctctgtcgg ccgcgtgtc gtactctac gacggcgga cgacctggac cgaggccaag 4860
 tccgccatc agggcggcag ttggacggcg accgtgaacc acgcgggcg caccggcaag 4920
 gacgtgacc tgaaggccga actgaccgac gccaacggca actcggtcac ccagaccgtg 4980

gtggacgcct actcgggtgcg t

5001

<210> 42

<211> 1667

<212> PRT

<213> Streptomyces carbophilus

<400> 42

Met Thr Thr Ala Ser Ala Gly Leu Ser Gly Gly Cys Arg Pro Gly Cys
 1 5 10 15

Ser Ala Gly Asp Pro Ala Pro Leu Val Gly Val Pro Ala Gln Leu Glu
 20 25 30

Pro Gly Arg His Ser Gly Glu Leu His Gln Ala Leu His Pro Pro Leu
 35 40 45

His Gly Pro Gln Ala Gln Ile Gln Leu Leu Gly Gly Ala Gly Val Arg
 50 55 60

His Pro Gly Glu Gln Gln Arg Gln Asp Leu Gln Val Gly Pro Val Gly
 65 70 75 80

Ala Arg Pro Val Leu His Asp Val Ala Pro Pro Ala Ala Glu Pro Gln
 85 90 95

Arg Gln Arg Val Pro Pro His Arg Leu Glu Gln Ala His Gln Arg Phe
 100 105 110

Glu Glu Pro Ala Arg Val His His Glu Arg Gly Arg Leu Gly Ala Ala
 115 120 125

Ala Gly Gln Arg His His Arg Glu Gly Ala Val Arg Asp Asp Glu Leu
 130 135 140

Gly Arg His Pro Leu His Arg Ala His Leu Leu Val Ala Ala Glu Cys

145 150 155 160

Arg Gly Gln Leu Asp Asp Pro Gly Gly Gln Arg Glu His Leu Ala Leu
 165 170 175

Asp His His Pro Val Asp Asp Pro Ala Ala Arg Arg Pro Phe Leu Gly
 180 185 190

Leu Val Val His Ala Gly His Arg Asp Arg Cys Ala Arg His Gln Arg
 195 200 205

Ala His Leu Val Gly Gly Ala Gln Leu Gln Leu Val Glu Ala Val Gly
 210 215 220

His Arg Ala Arg Pro Arg His His Leu Asp Glu Val Val His Gly Gly
 225 230 235 240

Phe Gly Arg Leu Gly Pro Val Leu Arg Gly Glu Gln Arg Arg Arg Gln
 245 250 255

Leu Arg Leu Leu Gln Leu Val Pro Leu Leu Gly Glu Gln Arg Ala Gln
 260 265 270

Arg His Pro Arg Arg Arg Arg Asp Pro Pro Pro Gly Ala Gly Arg Arg
 275 280 285

Leu Gly Gly Gln Ala Met Thr Leu Gln Pro Ala Gln Arg Pro Leu Gly
 290 295 300

Leu Ala Leu Arg Gln Arg Glu Thr Val Arg Glu Ile Ala His Leu Gly
 305 310 315 320

Arg Pro His Arg Asp Gln Gly Ala Val Arg Arg Leu Leu Gly Leu Val
 325 330 335

Glu Thr Tyr Arg Ser Gln His His Gly Pro Pro Ser Ser Pro Ala Arg

340 345 350

Trp Arg Glu Thr Ala Pro Ala Gln Thr Arg Arg Thr Thr Ser Ser Pro
355 360 365

Tyr Pro Ser Pro Leu Cys Gln Cys Arg Ala Thr Ala Ala Pro Thr Ala
370 375 380

Ser Gly Arg Arg Ala Phe Val Leu Phe Gly His Ala Cys Leu Leu Phe
385 390 395 400

Arg Asn His Leu Gly Arg Ala Met Arg Pro Ile Ser Arg Thr Ala Leu
405 410 415

Gly Val Ala Thr Ala Ala Ala Leu Ala Val Thr Ala Val Ala Pro Ser
420 425 430

Val Ala Ala Pro Arg Gly Asp Gly Thr Ala Asp Thr Ala Lys Arg Pro
435 440 445

Leu Val Gly Thr Ala Ala Ser Ser Thr Gly Thr Pro Ala Thr Val Thr
450 455 460

Leu Val Thr Gly Asp Lys Val Val Val Gly Arg Asp Ala Ser Gly Thr
465 470 475 480

Pro Thr Gly Val Thr Ala Leu Pro Arg Asp Asp Gly Ser Val Pro Leu
485 490 495

Val Gln Thr Arg Gln Val Gly Lys Glu Leu Tyr Val Tyr Pro Asp Asp
500 505 510

Ala Ala Pro Ala Leu Ala Ala Gly Thr Val Asp Gln Glu Leu Phe Asn
515 520 525

Val Ala Gly Leu Ile Arg Gln Gly Tyr Asp Asp Ala His Ser Lys Thr

530 535 540

Ile Pro Leu Ile Ala Val Tyr Gly Ser Ala Ala Ala Arg Ser Ala Ala
545 550 555 560

Pro Ala Val Pro Arg Gly Thr Arg Ala Gly Leu Asp Leu Pro Ala Val
565 570 575

His Gly Arg Ala Leu Ser Ala Asp Lys Thr Lys Ala Ala Gln Met Trp
580 585 590

Ala Asp Val Asn Ala Ser Arg Thr Arg Ser Ala Ser Ala Gly Ile Lys
595 600 605

Lys Leu Trp Leu Asp Arg Lys Val Thr Ala Ser Leu Ala Gln Ser Ser
610 615 620

Arg Gln Ile Arg Ala Asp Leu Ala Gln Ala Ala Gly Tyr Asp Gly Lys
625 630 635 640

Gly Thr Lys Val Ala Val Leu Asp Thr Gly Val Asp Ala Glu His Pro
645 650 655

Asp Leu Lys Gly Arg Ile Val Ala Ser Glu Asn Phe Thr Asp Ser Pro
660 665 670

Asp Thr Glu Asp Arg Gln Gly His Gly Thr His Thr Thr Ser Thr Val
675 680 685

Gly Gly Ser Gly Ala Ala Ser Gly Gly Lys Glu Lys Gly Ile Ala Pro
690 695 700

Gly Thr Gly Leu Leu Val Gly Lys Val Leu Asn Asp Ser Gly Ser Gly
705 710 715 720

Asp Ser Ser Trp Ile Ile Ala Gly Met Gln Trp Ala Val Asp Asn Lys

725

730

735

Ala Asp Val Val Ser Met Ser Leu Gly Ser Pro Val Pro Thr Asp Cys
 740 745 750

Thr Asp Pro Met Ser Val Ala Ala Gln Gln Leu Ala Thr Asp Ala Asp
 755 760 765

His Thr Leu Phe Val Val Ala Ala Gly Asn Ser Gly Pro Ser Leu Asn
 770 775 780

Thr Val Ser Ser Pro Gly Cys Ala Pro Ala Val Leu Thr Val Gly Ala
 785 790 795 800

Val Asp His Asp Asp Ala Thr Ala Ser Phe Ser Ser Arg Gly Pro Ala
 805 810 815

Pro Phe Thr His Thr Leu Lys Pro Glu Ile Ser Ala Pro Gly Val Asp
 820 825 830

Ile Leu Ala Ala Asn Ala Gly Gly Arg Gly Val Tyr Ala Tyr Gln Ser
 835 840 845

Met Ser Gly Thr Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala
 850 855 860

Ile Val Lys Gln Arg His Pro Asp Trp Thr Ala Gln Gln Ile Lys Ala
 865 870 875 880

Ala Leu Val Ser Ser Ala Asp Ser Ala Val Pro Gly Asp Val Arg Glu
 885 890 895

Thr Gly Gly Gly Arg Leu Asp Val Glu Ala Ala Val Asp Glu Thr Val
 900 905 910

Ile Gly Ala Pro Ala Val Gln Ala Gly Thr Phe Asp Trp Pro Gln Asp

915

920

925

Lys Ser Asp Arg Thr Thr Val Thr Val Pro Tyr Thr Asn Ala Ser Asp
 930 935 940

Arg Pro Val Thr Leu Asp Leu Lys Val Ala Gly Val Thr Gly Asn Asp
 945 950 955 960

Gly Ser Ala Val Asn Ser Ala Val Ala Ala Leu Arg Ser Arg Ser Val
 965 970 975

Thr Val Pro Ala Gly Ala Thr Val Lys Val Pro Leu Thr Ile Asp Pro
 980 985 990

Gly Ala Arg Leu Lys Ala Ala Gln Tyr Gly Asp Val Thr Gly Arg Val
 995 1000 1005

Leu Ala Thr Ala His Gly Val Lys Val Ser Thr Pro Phe Ser Leu
 1010 1015 1020

Tyr Val Glu Pro Glu Thr Val Thr Leu Arg Val Lys Leu Val Asp
 1025 1030 1035

Arg Gln Gly Arg Pro Ala Ala Gly Ala Ser Ser Leu Asp Val Ile
 1040 1045 1050

Gly Thr Asp Thr Ala Thr Gly Glu Arg Arg Phe Asn Glu Gly Ala
 1055 1060 1065

Thr Asp Gln Leu Tyr Arg Leu Arg Pro Gly Ala Tyr Phe Val Ser
 1070 1075 1080

Ser Phe Val Thr Ser Ala Asp Pro Gly Asp Ala Thr Gly Ala Asn
 1085 1090 1095

Val Gly Ser Val Ser Tyr Leu Gly Arg Pro Gln Leu Asp Leu Lys

1100 1105 1110

Lys Asp Thr Thr Leu Val Leu Asp Ala Arg Ala Ala His Arg Leu
1115 1120 1125

Ser Val Arg Thr Asp Arg Pro Ser Glu Val Arg Thr Thr Thr Leu
1130 1135 1140

Gly Phe Ala Arg Ser Trp Gly Gly Gln Trp Leu His Ser Gly Ser
1145 1150 1155

Ile Thr Gly Ser Arg Leu Ile Asp Asp Tyr Tyr Ala Asp Val Arg
1160 1165 1170

Gly Gly Ala Arg Thr Gly Asp Phe Glu Phe Gly Ser Tyr Trp Arg
1175 1180 1185

Ala Tyr Ala Pro Gln Phe Glu Lys Leu Ala Val Thr Gly Gly Pro
1190 1195 1200

Ala Leu His Pro Leu Thr Ala Ser Val Gly Ser Asp Asn Leu Asp
1205 1210 1215

Gly Thr Gly Ser Ala Pro Leu Val Asp Ala Gly Arg Gly Thr Pro
1220 1225 1230

Asp Glu Leu Lys Ala Ala Gly Val Gly Gly Lys Ile Ala Phe Val
1235 1240 1245

Ala Val Pro Asp Asp Pro Asp Ser Leu Ala Thr Leu Ala Arg Asp
1250 1255 1260

Ala Lys Ala Ala Gly Ala Thr Ala Leu Ala Val His Arg Pro Ser
1265 1270 1275

Asn Gly Arg Trp Leu Pro Ser Tyr Gly Phe Ala Gly Gly Pro Leu

1280 1285 1290

Pro Thr Leu Ala Ile Glu Ala Ser Glu Ala Ser Asp Leu Ala Ala
1295 1300 1305

Arg Leu Ala His Gly Pro Val Thr Leu Ala Trp Lys Ala Thr Ala
1310 1315 1320

Lys Ser Gly Tyr Val Tyr Asn Leu Gly Phe Gln Glu Asp Gly Gly
1325 1330 1335

Ile Gly Ser Asp Arg Thr Tyr Arg Val Arg Asp Gly Gln Leu Gly
1340 1345 1350

Arg Asn Val Ser Thr Tyr His Ser Met Gly Val Pro Ala Asp Phe
1355 1360 1365

Val Asp Gly Val Ser Ala His Arg Pro Val Gly Gly Asp Pro Ile
1370 1375 1380

Gly Val Ser Gly Ile Asp Leu Val Ala Val Pro Ser Thr Arg Thr
1385 1390 1395

Glu Tyr Tyr Thr Ala Gly Gly Thr Thr Trp Asp His Phe Val Ser
1400 1405 1410

Ser Ser Phe Pro Phe Gly Glu Phe Met Leu Ala Pro Ala Thr Ala
1415 1420 1425

Tyr Arg Pro Gly Lys Glu Thr Lys Glu Ser Trp Tyr Asp Gly Val
1430 1435 1440

Val Gly Pro Asp Ala Gly Arg Asp Ala Thr Gly Arg Pro Leu Leu
1445 1450 1455

Ala Ala Glu Arg Gln Gly Asn Leu Met Gly Phe Ala Pro Gly Met

1460 1465 1470

Trp Gly Asp Thr Gln His Ser Ala Gln Pro Gly Ser Phe Gly Asp
1475 1480 1485

Ile Gly Ser Leu Leu Leu Arg Arg Asn Gly Glu Asp Tyr Asp Ser
1490 1495 1500

Ser Gly Trp Pro Ser Gly Val Phe Thr Val Pro Ala Asp Asp Ala
1505 1510 1515

Ala Tyr Glu Leu Val Ser Asp Asn Gln Lys Ile Gly Pro Ser Ala
1520 1525 1530

Ala Val Trp Lys Arg Ser Gln Glu Val Val Thr Ser Trp Lys Phe
1535 1540 1545

Arg Ser His Leu Val Glu Ser Ala Phe Ser Gln Ala Ile Pro Leu
1550 1555 1560

Leu Phe Pro His Tyr Gly Val Ala Gln Asp Gly Leu Lys Thr Val
1565 1570 1575

Pro Ala Ala Asp Gly Gln Lys Ile Ala Leu Ser Val Thr Gly His
1580 1585 1590

Ala Gly Tyr Thr Pro Ala Ala Leu Val Ser Ala Ala Leu Ser Tyr
1595 1600 1605

Ser Tyr Asp Gly Gly Thr Thr Trp Thr Glu Ala Lys Ser Arg His
1610 1615 1620

Gln Gly Gly Ser Trp Thr Ala Thr Val Asn His Ala Gly Ala Thr
1625 1630 1635

Gly Lys Asp Val Thr Leu Lys Ala Glu Leu Thr Asp Ala Asn Gly

1640 1645 1650

Asn Ser Val Thr Gln Thr Val Val Asp Ala Tyr Ser Val Arg
 1655 1660 1665

<210> 43
 <211> 1941
 <212> DNA
 <213> *Amycolatopsis orientalis*

<400> 43
 atgcgaacct ttgctgtgcc cttacggcgg cgtgccgccg gattgggtgt ggtcgccaca 60
 acggcccttg cgtaacct cgcggtcgcg caaccggcgt cggccgctgt gggacagggt 120
 ctcggcgctg atcgtgccgg tgccatcaag gacagctaca tcgttcagat caaggacagt 180
 gcgtcgccga agggccggtc cgcgcgagacc gcgcgtgagc tgacggccga acacggcggc 240
 cagggtgaagg tcgcgtggca gcatgcgttg aacggcttcg ctgtcacgat gaccgccgag 300
 caggcgcggc ggatggctgc cgatccgcgg atcgactacg tccagcagga cgcggtcgtc 360
 agcatcgcgg acacgcaacc caatccgccg tcgtgggggc tcgaccggat cgatcagcgg 420
 gatcgcccg ctgacaacag ttacacgtac aacacgaccg ccagcaacgt gcacgtgtac 480
 gttctggaca ccggcatccg catctgcac agcacgttcg gcgggcgggc cacgtggggc 540
 ttcaacgcca tcgacaccaa caacaccgac tgcaacgggc acggcacgca cgtcgccggg 600
 accatcggcg gttcgagta cggcgctgcc aaggcgcgcg agctggtggc cgtgaaggtc 660
 ctcaactgtc agggttctgg ctggtcgct caggctgtca acggcatcaa ctgggtgacg 720
 cagaacgcgg tcaaaccggc cgtggccaac atgagccttg gtgccgccgg ttcggacacc 780
 gcgaccgaga acgcgggtcc caactcgatc gcctccggcg tgacgtacgc gatcgcgctc 840
 ggcaactcca accagaacgc gtgcaacttc acgccggcca aggtggccga ggcgatcacc 900
 gtgaacgcct cggacatcaa cgacgcccgt gcctcgttct ccaacttcgg tacgtgcacc 960
 gacatcttcg ggccaggcgt gaacatcacc tcggcgtgga tcaccaacga cacggcgacc 1020
 aacacgatca gcggtacctc gatggccacg ccacatgtgg caggcgggcg ggcactgtgg 1080

ctggccgacc accccaacga ctggccgcc gcggtgcaga ccgctctgat caacaactcg 1140
 tcgctgaaca agatcagcaa tcccggcacc ggctcgccga accgcttgcg gttcaccaac 1200
 atcggtgatc ccggacccgg caaccgctcg gtgagcaacc ccggcaacca gaccacgacc 1260
 gttggcagcg cagtgaacct gcaactcagc gcgtccggcg gtaccccgcc gtacacgtgg 1320
 tcggccaccg gtttgcgcc cggcttggcg atttcgagcg gcgggttgat ctctggcacg 1380
 ccgaacaccg cgggcacgta cagcgtgacc gtgacggcga ccgacacggc cggcaaggcc 1440
 ggtagcgca ccttcacatg gacggtcaac ccggtcggcg gctgcacggg cgcggttcag 1500
 aagatcgcca accccggctt cgagtcgggt tcggcgctgt ggaccgagac cagcaacgtg 1560
 atcgggcagc acggcaccga tcaaccggcg cacgccggca cgtggagcgc ctggctgaac 1620
 ggctacggct tcattccgtac cgaccggctt tcgcagtcgg tgaccatccc ggctggctgc 1680
 acctcgtaca agctgtcgta ttggctgcac atcgactcgg acgagacgac cgggtcggtc 1740
 cagtacgaca agctcacggt ccagctcggc tcgaacacgc tggccacgta ctgaacctg 1800
 aacaaagccg ccggttacca gcagcgcacc ttcgacgtcg gcgcgtacgc cggccagacg 1860
 gtcacgctga ccttcaccgg caccgaggac atctcgtcgc agacgtcgtt cgtcgtcgac 1920
 gacgtcacc c ttgacgtgag c 1941

<210> 44
 <211> 647
 <212> PRT
 <213> Amycolatopsis orientalis

<400> 44

Met Arg Thr Phe Ala Val Pro Leu Arg Arg Arg Ala Ala Gly Leu Gly
 1 5 10 15

Val Val Ala Thr Thr Ala Leu Ala Leu Thr Ile Ala Val Ala Gln Pro
 20 25 30

Ala Ser Ala Ala Val Gly Gln Val Leu Gly Ala Asp Arg Ala Gly Ala

35

40

45

Ile Lys Asp Ser Tyr Ile Val Gln Ile Lys Asp Ser Ala Ser Pro Lys
 50 55 60

Ala Arg Ser Ala Gln Thr Ala Arg Glu Leu Thr Ala Glu His Gly Gly
 65 70 75 80

Gln Val Lys Val Ala Trp Gln His Ala Leu Asn Gly Phe Ala Val Thr
 85 90 95

Met Thr Ala Glu Gln Ala Arg Arg Met Ala Ala Asp Pro Arg Ile Asp
 100 105 110

Tyr Val Gln Gln Asp Ala Val Val Ser Ile Ala Asp Thr Gln Pro Asn
 115 120 125

Pro Pro Ser Trp Gly Leu Asp Arg Ile Asp Gln Arg Asp Arg Pro Leu
 130 135 140

Asp Asn Ser Tyr Thr Tyr Asn Thr Thr Ala Ser Asn Val His Val Tyr
 145 150 155 160

Val Leu Asp Thr Gly Ile Arg Ile Ser His Ser Thr Phe Gly Gly Arg
 165 170 175

Ala Thr Trp Gly Phe Asn Ala Ile Asp Thr Asn Asn Thr Asp Cys Asn
 180 185 190

Gly His Gly Thr His Val Ala Gly Thr Ile Gly Gly Ser Gln Tyr Gly
 195 200 205

Val Ala Lys Gly Ala Gln Leu Val Ala Val Lys Val Leu Asn Cys Gln
 210 215 220

Gly Ser Gly Ser Phe Ala Gln Val Val Asn Gly Ile Asn Trp Val Thr

225 230 235 240
 Gln Asn Ala Val Lys Pro Ala Val Ala Asn Met Ser Leu Gly Ala Ala
 245 250 255

Gly Ser Asp Thr Ala Thr Glu Asn Ala Val Arg Asn Ser Ile Ala Ser
 260 265 270

Gly Val Thr Tyr Ala Ile Ala Ser Gly Asn Ser Asn Gln Asn Ala Cys
 275 280 285

Asn Phe Thr Pro Ala Lys Val Ala Glu Ala Ile Thr Val Asn Ala Ser
 290 295 300

Asp Ile Asn Asp Ala Arg Ala Ser Phe Ser Asn Phe Gly Thr Cys Thr
 305 310 315 320

Asp Ile Phe Gly Pro Gly Val Asn Ile Thr Ser Ala Trp Ile Thr Asn
 325 330 335

Asp Thr Ala Thr Asn Thr Ile Ser Gly Thr Ser Met Ala Thr Pro His
 340 345 350

Val Ala Gly Gly Ala Ala Leu Trp Leu Ala Asp His Pro Asn Asp Ser
 355 360 365

Ala Ala Ala Val Gln Thr Ala Leu Ile Asn Asn Ser Ser Leu Asn Lys
 370 375 380

Ile Ser Asn Pro Gly Thr Gly Ser Pro Asn Arg Leu Leu Phe Thr Asn
 385 390 395 400

Ile Gly Asp Pro Gly Pro Gly Asn Pro Ser Val Ser Asn Pro Gly Asn
 405 410 415

Gln Thr Thr Thr Val Gly Ser Ala Val Asn Leu Gln Leu Ser Ala Ser

420 425 430

Gly Gly Thr Pro Pro Tyr Thr Trp Ser Ala Thr Gly Leu Pro Pro Gly
435 440 445

Leu Ala Ile Ser Ser Gly Gly Leu Ile Ser Gly Thr Pro Asn Thr Ala
450 455 460

Gly Thr Tyr Ser Val Thr Val Thr Ala Thr Asp Thr Ala Gly Lys Ala
465 470 475 480

Gly Ser Ala Thr Phe Thr Trp Thr Val Asn Pro Val Gly Gly Cys Thr
485 490 495

Gly Ala Gly Gln Lys Ile Ala Asn Pro Gly Phe Glu Ser Gly Ser Ala
500 505 510

Ser Trp Thr Ala Thr Ser Asn Val Ile Gly Gln His Gly Thr Asp Gln
515 520 525

Pro Ala His Ala Gly Thr Trp Ser Ala Trp Leu Asn Gly Tyr Gly Phe
530 535 540

Ile Arg Thr Asp Arg Leu Ser Gln Ser Val Thr Ile Pro Ala Gly Cys
545 550 555 560

Thr Ser Tyr Lys Leu Ser Tyr Trp Leu His Ile Asp Ser Asp Glu Thr
565 570 575

Thr Gly Ser Val Gln Tyr Asp Lys Leu Thr Val Gln Leu Gly Ser Asn
580 585 590

Thr Leu Ala Thr Tyr Ser Asn Leu Asn Lys Ala Ala Gly Tyr Gln Gln
595 600 605

Arg Thr Phe Asp Val Gly Ala Tyr Ala Gly Gln Thr Val Thr Leu Thr

610 615 620

Phe Thr Gly Thr Glu Asp Ile Ser Leu Gln Thr Ser Phe Val Val Asp
625 630 635 640

Asp Val Thr Leu Asp Val Ser
645

<210> 45
<211> 381
<212> PRT
<213> Bacillus licheniformis

<400> 45

Met Arg Ser Lys Lys Leu Trp Ile Ser Leu Leu Phe Ala Leu Thr Leu
1 5 10 15

Ile Phe Thr Met Ala Phe Ser Asn Met Ser Val Gln Ala Ala Gly Lys
20 25 30

Ser Ser Thr Glu Lys Lys Tyr Ile Val Gly Phe Lys Gln Thr Met Ser
35 40 45

Ala Met Ser Ser Ala Lys Lys Lys Asp Val Ile Ser Glu Lys Gly Gly
50 55 60

Lys Val Gln Lys Gln Phe Lys Tyr Val Asn Ala Ala Ala Ala Thr Leu
65 70 75 80

Asp Glu Lys Ala Val Lys Glu Leu Lys Lys Asp Pro Ser Val Ala Tyr
85 90 95

Val Glu Glu Asp His Ile Ala His Glu Tyr Ala Gln Ser Val Pro Tyr
100 105 110

Gly Ile Ser Gln Ile Lys Ala Pro Ala Leu His Ser Gln Gly Tyr Thr
115 120 125

Gly Ser Asn Val Lys Val Ala Val Ile Asp Ser Gly Ile Asp Ser Ser
 130 135 140

His Pro Asp Leu Asn Val Arg Gly Gly Ala Ser Phe Val Pro Ser Glu
 145 150 155 160

Thr Asn Pro Tyr Gln Asp Gly Ser Ser His Gly Thr His Val Ala Gly
 165 170 175

Thr Ile Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val Ser Pro
 180 185 190

Ser Ala Ser Leu Tyr Ala Val Lys Val Leu Asp Ser Thr Gly Ser Gly
 195 200 205

Gln Tyr Ser Trp Ile Ile Asn Gly Ile Glu Trp Ala Ile Ser Asn Asn
 210 215 220

Met Asp Val Ile Asn Met Ser Leu Gly Gly Pro Thr Gly Ser Thr Ala
 225 230 235 240

Leu Lys Thr Val Val Asp Lys Ala Val Ser Ser Gly Ile Val Val Ala
 245 250 255

Ala Ala Ala Gly Asn Glu Gly Ser Ser Gly Ser Thr Ser Thr Val Gly
 260 265 270

Tyr Pro Ala Lys Tyr Pro Ser Thr Ile Ala Val Gly Ala Val Asn Ser
 275 280 285

Ser Asn Gln Arg Ala Ser Phe Ser Ser Ala Gly Ser Glu Leu Asp Val
 290 295 300

Met Ala Pro Gly Val Ser Ile Gln Ser Thr Leu Pro Gly Gly Thr Tyr
 305 310 315 320

Gly Ala Tyr Asn Gly Thr Ser Met Ala Thr Pro His Val Ala Gly Ala
 325 330 335

Ala Ala Leu Ile Leu Ser Lys His Pro Thr Trp Thr Asn Ala Gln Val
 340 345 350

Arg Asp Arg Leu Glu Ser Thr Ala Thr Tyr Leu Gly Asn Ser Phe Tyr
 355 360 365

Tyr Gly Lys Gly Leu Ile Asn Val Gln Ala Ala Ala Gln
 370 375 380

<210> 46
 <211> 363
 <212> PRT
 <213> Rhizomucor miehei

<400> 46

Met Val Leu Lys Gln Arg Ala Asn Tyr Leu Gly Phe Leu Ile Val Phe
 1 5 10 15

Phe Thr Ala Phe Leu Val Glu Ala Val Pro Ile Lys Arg Gln Ser Asn
 20 25 30

Ser Thr Val Asp Ser Leu Pro Pro Leu Ile Pro Ser Arg Thr Ser Ala
 35 40 45

Pro Ser Ser Ser Pro Ser Thr Thr Asp Pro Glu Ala Pro Ala Met Ser
 50 55 60

Arg Asn Gly Pro Leu Pro Ser Asp Val Glu Thr Lys Tyr Gly Met Ala
 65 70 75 80

Leu Asn Ala Thr Ser Tyr Pro Asp Ser Val Val Gln Ala Met Ser Ile
 85 90 95

Asp Gly Gly Ile Arg Ala Ala Thr Ser Gln Glu Ile Asn Glu Leu Thr
 100 105 110

Tyr Tyr Thr Thr Leu Ser Ala Asn Ser Tyr Cys Arg Thr Val Ile Pro
 115 120 125

Gly Ala Thr Trp Asp Cys Ile His Cys Asp Ala Thr Glu Asp Leu Lys
 130 135 140

Ile Ile Lys Thr Trp Ser Thr Leu Ile Tyr Asp Thr Asn Ala Met Val
 145 150 155 160

Ala Arg Gly Asp Ser Glu Lys Thr Ile Tyr Ile Val Phe Arg Gly Ser
 165 170 175

Ser Ser Ile Arg Asn Trp Ile Ala Asp Leu Thr Phe Val Pro Val Ser
 180 185 190

Tyr Pro Pro Val Ser Gly Thr Lys Val His Lys Gly Phe Leu Asp Ser
 195 200 205

Tyr Gly Glu Val Gln Asn Glu Leu Val Ala Thr Val Leu Asp Gln Phe
 210 215 220

Lys Gln Tyr Pro Ser Tyr Lys Val Ala Val Thr Gly His Ser Leu Gly
 225 230 235 240

Gly Ala Thr Ala Leu Leu Cys Ala Leu Asp Leu Tyr Gln Arg Glu Glu
 245 250 255

Gly Leu Ser Ser Ser Asn Leu Phe Leu Tyr Thr Gln Gly Gln Pro Arg
 260 265 270

Val Gly Asp Pro Ala Phe Ala Asn Tyr Val Val Ser Thr Gly Ile Pro
 275 280 285

Tyr Arg Arg Thr Val Asn Glu Arg Asp Ile Val Pro His Leu Pro Pro
 290 295 300

Ala Ala Phe Gly Phe Leu His Ala Gly Glu Glu Tyr Trp Ile Thr Asp
 305 310 315 320

Asn Ser Pro Glu Thr Val Gln Val Cys Thr Ser Asp Leu Glu Thr Ser
 325 330 335

Asp Cys Ser Asn Ser Ile Val Pro Phe Thr Ser Val Leu Asp His Leu
 340 345 350

Ser Tyr Phe Gly Ile Asn Thr Gly Leu Cys Thr
 355 360

<210> 47

<211> 342

<212> PRT

<213> *Candida antarctica*

<400> 47

Met Lys Leu Leu Ser Leu Thr Gly Val Ala Gly Val Leu Ala Thr Cys
 1 5 10 15

Val Ala Ala Thr Pro Leu Val Lys Arg Leu Pro Ser Gly Ser Asp Pro
 20 25 30

Ala Phe Ser Gln Pro Lys Ser Val Leu Asp Ala Gly Leu Thr Cys Gln
 35 40 45

Gly Ala Ser Pro Ser Ser Val Ser Lys Pro Ile Leu Leu Val Pro Gly
 50 55 60

Thr Gly Thr Thr Gly Pro Gln Ser Phe Asp Ser Asn Trp Ile Pro Leu
 65 70 75 80

Ser Thr Gln Leu Gly Tyr Thr Pro Cys Trp Ile Ser Pro Pro Pro Phe
 85 90 95

Met Leu Asn Asp Thr Gln Val Asn Thr Glu Tyr Met Val Asn Ala Ile
 100 105 110

Thr Ala Leu Tyr Ala Gly Ser Gly Asn Asn Lys Leu Pro Val Leu Thr
 115 120 125

Trp Ser Gln Gly Gly Leu Val Ala Gln Trp Gly Leu Thr Phe Phe Pro
 130 135 140

Ser Ile Arg Ser Lys Val Asp Arg Leu Met Ala Phe Ala Pro Asp Tyr
 145 150 155 160

Lys Gly Thr Val Leu Ala Gly Pro Leu Asp Ala Leu Ala Val Ser Ala
 165 170 175

Pro Ser Val Trp Gln Gln Thr Thr Gly Ser Ala Leu Thr Thr Ala Leu
 180 185 190

Arg Asn Ala Gly Gly Leu Thr Gln Ile Val Pro Thr Thr Asn Leu Tyr
 195 200 205

Ser Ala Thr Asp Glu Ile Val Gln Pro Gln Val Ser Asn Ser Pro Leu
 210 215 220

Asp Ser Ser Tyr Leu Phe Asn Gly Lys Asn Val Gln Ala Gln Ala Val
 225 230 235 240

Cys Gly Pro Leu Phe Val Ile Asp His Ala Gly Ser Leu Thr Ser Gln
 245 250 255

Phe Ser Tyr Val Val Gly Arg Ser Ala Leu Arg Ser Thr Thr Gly Gln
 260 265 270

Ala Arg Ser Ala Asp Tyr Gly Ile Thr Asp Cys Asn Pro Leu Pro Ala
 275 280 285

Asn Asp Leu Thr Pro Glu Gln Lys Val Ala Ala Ala Leu Leu Ala
 290 295 300

Pro Ala Ala Ala Ala Ile Val Ala Gly Pro Lys Gln Asn Cys Glu Pro
 305 310 315 320

Asp Leu Met Pro Tyr Ala Arg Pro Phe Ala Val Gly Lys Arg Thr Cys
 325 330 335

Ser Gly Ile Val Thr Pro
 340

<210> 48
 <211> 1556
 <212> DNA
 <213> *Penicillium citrinum*

<400> 48
 acggcaatta tctccgatca ccatactcag cgaaagatgg cgcccagcat agatgttatt 60
 cccactgctg ctccacggc agcaggaatg atttcagaca tggaagcggc atttaagtcg 120
 gccgttaaataaagcaaat ccccgggggc gttgtcatgg ccaggagcat gaacggtacg 180
 tgatgttttc tggactatct tgcacatctc ttggcagaac aacacattga cgacttgtat 240
 tcttaatagg tgacattgat tacacgcggt gctttggggc gagaacgggt gagcgcgatg 300
 aatgccaaag actaccacca atggaaatcg acacaccctt gcgacttgcc agtgcaacaa 360
 aacttctcac cacaataatg gccttcaggt gtatggaaca aggtctggtg gacctcgatg 420
 agaatgtcaa caggcttctt cccgatttga gcgacatgca agtcttgact ggctttgacg 480
 cggccggtaa cgccataatg agggatcgcg aagggtattat caagttgagg ttcgtatcat 540
 gatgaagcga tgttgcgcca tgtctattga ttcttgta acgtgtacat tgccatggct 600
 cttaaaggca cctcttgact cacacttcgg gtctctctta cgcattccta catcctctcc 660

tacaggaata catggccaag ggttacctca agacagccga gaaattcggc attcaaagtc 720
 gactcgctcc tctgcaatc aacgaccccg gagtagagt gatctatggt gcaaattctg 780
 actgggccgg taagcttatt gagcgcgcca ccggtgtgga cctggaggaa ttcatgcaga 840
 agaataattg cgagcctcta ggtatcacg atatgacatt caagctgcag cagcggcctg 900
 acatgcttgc tcgtcgttct gatcagacgc gccgtaatga gaatgggagt ctgcgatagc 960
 acgactcggg ttatttccgc catgacgggg aggagtgcct cgggggacag ggcgttttct 1020
 gcggcccgga gtcatatatg aaggtcctta actccttgat gaagcatgac ggtctcctct 1080
 tgaagaaaga cacaattgag cttatgttcc agcccgctct ggacgcggag ctgaaaaga 1140
 aatgaatga tcacatgat accacgccgc acatcaacta cggcgagca tgcccccg 1200
 ttatgaggag aaacttggg ctgggtggaa ttatcgctat gggcgatctc gatggtcata 1260
 attggcggcg ggaggggtcc ctacacttg gtggcggacc gaatattgtt tgggtgcgta 1320
 tttgattga ttaactgca atcttggca ggtcacaga catatattaa cgcatatata 1380
 gcaaactgat ccgacggtag ggcttgtac cctggtgtt ttccagctag agccctggaa 1440
 tgatccgatt tgcaaagatc tactcgcaa gttcgaaaaa gcgatgtact cacagggtgaa 1500
 atgccgcaac tagttagaga ctaggtacat gagacccatg taaatgattt acaagt 1556

<210> 49

<211> 418

<212> PRT

<213> *Penicillium citrinum*

<400> 49

Met Ala Pro Ser Ile Asp Val Ile Pro Thr Ala Ala Ser Thr Ala Ala

1 5 10 15

Gly Met Ile Ser Asp Met Glu Ala Ala Phe Lys Ser Ala Val Lys Leu

20 25 30

Lys Gln Ile Pro Gly Ala Val Val Met Ala Arg Ser Met Asn Gly Asp

35 40 45

Ile Asp Tyr Thr Arg Cys Phe Gly Ala Arg Thr Val Glu Arg Asp Glu
 50 55 60

Cys Gln Arg Leu Pro Pro Met Glu Ile Asp Thr Pro Leu Arg Leu Ala
 65 70 75 80

Ser Ala Thr Lys Leu Leu Thr Thr Ile Met Ala Leu Gln Cys Met Glu
 85 90 95

Gln Gly Leu Val Asp Leu Asp Glu Asn Val Asn Arg Leu Leu Pro Asp
 100 105 110

Leu Ser Asp Met Gln Val Leu Thr Gly Phe Asp Ala Ala Gly Asn Ala
 115 120 125

Ile Met Arg Asp Arg Glu Gly Ile Ile Lys Leu Arg His Leu Leu Thr
 130 135 140

His Thr Ser Gly Leu Ser Tyr Ala Phe Leu His Pro Leu Leu Gln Glu
 145 150 155 160

Tyr Met Ala Lys Gly Tyr Leu Lys Thr Ala Glu Lys Phe Gly Ile Gln
 165 170 175

Ser Arg Leu Ala Pro Pro Ala Ile Asn Asp Pro Gly Val Glu Trp Ile
 180 185 190

Tyr Gly Ala Asn Leu Asp Trp Ala Gly Lys Leu Ile Glu Arg Ala Thr
 195 200 205

Gly Val Asp Leu Glu Glu Phe Met Gln Lys Asn Ile Cys Glu Pro Leu
 210 215 220

Gly Ile Thr Asp Met Thr Phe Lys Leu Gln Gln Arg Pro Asp Met Leu
 225 230 235 240

Ala Arg Arg Ser Asp Gln Thr Arg Arg Asn Glu Asn Gly Ser Leu Arg
 245 250 255

Tyr Asp Asp Ser Val Tyr Phe Arg His Asp Gly Glu Glu Cys Phe Gly
 260 265 270

Gly Gln Gly Val Phe Cys Gly Pro Glu Ser Tyr Met Lys Val Leu Asn
 275 280 285

Ser Leu Met Lys His Asp Gly Leu Leu Leu Lys Lys Asp Thr Ile Glu
 290 295 300

Leu Met Phe Gln Pro Ala Leu Asp Ala Glu Leu Glu Lys Lys Met Asn
 305 310 315 320

Asp His Met Asp Thr Thr Pro His Ile Asn Tyr Gly Ala Ala Leu Pro
 325 330 335

Pro Val Met Arg Arg Asn Phe Gly Leu Gly Gly Ile Ile Ala Met Gly
 340 345 350

Asp Leu Asp Gly His Asn Trp Arg Arg Glu Gly Ser Leu Thr Phe Gly
 355 360 365

Gly Gly Pro Asn Ile Val Trp Gln Ile Asp Pro Thr Val Gly Leu Cys
 370 375 380

Thr Leu Val Val Phe Gln Leu Glu Pro Trp Asn Asp Pro Ile Cys Lys
 385 390 395 400

Asp Leu Thr Arg Lys Phe Glu Lys Ala Met Tyr Ser Gln Val Lys Cys
 405 410 415

Arg Asn

<210> 50
 <211> 1425
 <212> DNA
 <213> *Monascus pilosus*

<400> 50
 atgctgaat ttctctctc tgatcgcatc aactctgaaa tccccagga gaaaagcgaa 60
 atggtaggat tcaagtatat cgacaatagc agccgccaga tcaaagaaat ggaagccgct 120
 ttccgatcgg ccgtgaaaac agggcagatc ccggggggcag tcatcatggc tcgagatcat 180
 agtggttaagc aaacccgcat tattctgtct tcttctctt ctatctcgac gtgtaataac 240
 cgggggagtg ggccgaaggc cgactgaact atacgcgctg cttcggggcg cggacggtgg 300
 tgcgcgatga gtgtaaccga ctccctccga tgcaggtcga caccctctgc cggctggcga 360
 gtgccaccaa gctgcttacg acgatcatgg cgctgcaatg cgtggagcgg gggctcgtga 420
 ggttgatga gacggtggat cgactgctgc cggatttgag tgcgatgaag gtgctggagg 480
 gggttgatgc cgcgggggag ccgaagatga gagagcggaa ggggaagatt actttgaagt 540
 aagtgaatct agctcgttc attctattg atacactgt gtatgtagag aaaaggagaa 600
 aaagagaaaa agagagagag actaatcac gtgctgttca cgcccagaca tctcctaaca 660
 cacacctccg gctgtccta cgtcttctc caccctctc tccgagaata catggccaaa 720
 ggccacctcc agacggctga gaaattcggg atccagagtc ggctggcgcc cccggccgct 780
 aacgacccgg gcgccgagtg gatctacggc gccaacctcg actggacggg gaagctggtc 840
 gagcgcgcca cgggcctgga cctggagcag tacctccaag agaacatctg cgcgccgctg 900
 aacatcaccg acatgacctt caagctgcag cagcgacccg atctgctggc gcggcgcgcc 960
 gaccagacgc accgcaacaa ggccgacggc cgcctgcgct acgacgactc ggtgtacttc 1020
 cggtcgacg gcgacgagtg ctttgggggc caggggggtct tctggggccc cgaatcctac 1080
 atgaaggctg tgactccct gctgcagcgc gacggggccc tgctgcggcc cgagaccgtg 1140
 gacttgatgt tccagcccgc gctcgatgcg caaacggaga agcagatgaa ccagcatatg 1200

gacgcgagcc cgcacatcaa ctacgggtggg ccgatgccca tgggtgtgcg gcggagtttt 1260
 gggcttggtg ggaatgattgc ctggaggat ctggatgggc agaagtggcg ccgaaagggc 1320
 tgttaacct ttggcggcgg gccgaatatt gtatgggtaa tgttactctc agccctacgc 1380
 ttcttttct tcttcttctt ctctctctc ttctgctcta gctga 1425

<210> 51
 <211> 413
 <212> PRT
 <213> *Monascus pilosus*

<400> 51

Met Arg Gln Phe Leu Ser Ser Asp Arg Ile Asn Ser Glu Ile Pro Gln
 1 5 10 15

Glu Lys Ser Glu Met Val Gly Phe Ser Asp Ile Asp Asn Ser Ser Arg
 20 25 30

Gln Ile Lys Glu Met Glu Ala Ala Phe Arg Ser Ala Val Lys Thr Gly
 35 40 45

Gln Ile Pro Gly Ala Val Ile Met Ala Arg Asp His Ser Gly Arg Leu
 50 55 60

Asn Tyr Thr Arg Cys Phe Gly Ala Arg Thr Val Val Arg Asp Glu Cys
 65 70 75 80

Asn Arg Leu Pro Pro Met Gln Val Asp Thr Pro Cys Arg Leu Ala Ser
 85 90 95

Ala Thr Lys Leu Leu Thr Thr Ile Met Ala Leu Gln Cys Val Glu Arg
 100 105 110

Gly Leu Val Arg Leu Asp Glu Thr Val Asp Arg Leu Leu Pro Asp Leu
 115 120 125

Ser Ala Met Lys Val Leu Glu Gly Phe Asp Ala Ala Gly Glu Pro Lys
 130 135 140

Met Arg Glu Arg Lys Gly Lys Ile Thr Leu Lys His Leu Leu Thr His
 145 150 155 160

Thr Ser Gly Leu Ser Tyr Val Phe Leu His Pro Leu Leu Arg Glu Tyr
 165 170 175

Met Ala Lys Gly His Leu Gln Thr Ala Glu Lys Phe Gly Ile Gln Ser
 180 185 190

Arg Leu Ala Pro Pro Ala Val Asn Asp Pro Gly Ala Glu Trp Ile Tyr
 195 200 205

Gly Ala Asn Leu Asp Trp Thr Gly Lys Leu Val Glu Arg Ala Thr Gly
 210 215 220

Leu Asp Leu Glu Gln Tyr Leu Gln Glu Asn Ile Cys Ala Pro Leu Asn
 225 230 235 240

Ile Thr Asp Met Thr Phe Lys Leu Gln Gln Arg Pro Asp Leu Leu Ala
 245 250 255

Arg Arg Ala Asp Gln Thr His Arg Asn Lys Ala Asp Gly Arg Leu Arg
 260 265 270

Tyr Asp Asp Ser Val Tyr Phe Arg Ser Asp Gly Asp Glu Cys Phe Gly
 275 280 285

Gly Gln Gly Val Phe Ser Gly Pro Glu Ser Tyr Met Lys Val Val His
 290 295 300

Ser Leu Leu Gln Arg Asp Gly Arg Leu Leu Arg Pro Glu Thr Val Asp
 305 310 315 320

Leu Met Phe Gln Pro Ala Leu Asp Ala Gln Thr Glu Lys Gln Met Asn
 325 330 335

Gln His Met Asp Ala Ser Pro His Ile Asn Tyr Gly Gly Pro Met Pro
 340 345 350

Met Val Leu Arg Arg Ser Phe Gly Leu Gly Gly Met Ile Ala Leu Glu
 355 360 365

Asp Leu Asp Gly Gln Lys Trp Arg Arg Lys Gly Cys Leu Thr Phe Gly
 370 375 380

Gly Gly Pro Asn Ile Val Trp Val Met Leu Leu Ser Ala Leu Arg Phe
 385 390 395 400

Val Phe Phe Phe Phe Phe Phe Phe Phe Cys Ser Ser
 405 410

<210> 52

<211> 1394

<212> DNA

<213> *Aspergillus terreus*

<400> 52

atgggatcca tcattgatgc tgctgcggca gcggatccgg ttgttctgat ggaaaccgcc 60

ttccgcaagg ccgtgaaatc caggcagatc cccggggcgg tcatcatggc ccgagattgc 120

agtggtgaga gacccaatc ggaccccttt gcgacaatta caagcacacc gagacgaatg 180

acagcgggac atacctaggc aatctaaatt atacgcgctg ctccggggct cggacggtgc 240

gacgggacga gtgcaatcag ctgccgccgc tacaggtcga caccctctgc cggctcgcca 300

gtgcgaccaa gctgctgacc acgatcatgg ccctacaatg catggagcgc ggtctcgtgg 360

acttgatga gacggtggat aggcctgctc cggatttgag cgcatgccc gtgctggagg 420

ggtttgacga cgcgggaaac gcaagattgc gagagcgtcg ggggaagatc acgctgcggc 480

acctgctgac gcatacatcg ggactgtcgt acgtcttctt ccatccgttg ctccgggaat 540

acatggccca gggccacctc cagtcggcag aaaagtttgg catccagagt cgcttggcgc 600
 cgccggccgt caacgaccct ggggaggagt ggatctacgg cgccaacctg gactgggcgg 660
 gtaagctcgt cgagcgggcc accggcctcg acctggagca gtacctgcag gagaatatct 720
 gtgcgccgt gggcatcacc gacatgacct ttaagctgca gcaacggccg gatatgcttg 780
 cgcgccgggc cgaccaaacg caccgcaact cggcggatgg ggcctgcgc tacgacgact 840
 cggctactt ccgggccgat ggagaggagt gcttcggcgg ccagggggtg ttctcgggcc 900
 ctgggtccta tatgaagtg cttcactcgc tgtgaagcg agacgggctc ctgctgcagc 960
 cacagaccgt ggacttgatg tticagcctg cctcgcagcc gcgactcgaa gagcagatga 1020
 accagcacat ggacgccagc ccacatatca actacggtgg gccgatgcc atggtccttc 1080
 gtgcagcct tgggctgggg gggatcatcg ccttgaggga tctggacgga gagaactggc 1140
 gccgaaaagg ttcttgacc ttgggggtg gcccaaacat tgttgggta agctcggctc 1200
 ctagattcct ttggttatg tcacctcaa tgtgatcca gcctactaag tgctattgta 1260
 attagcaaat cgaccccaa gccggcctgt gcaccctgc gttcttcaa ctggaaccct 1320
 ggaatgacc ggtctgtcgt gatctgacac gcacattcga gcatgccatc tatgcgcagt 1380
 accagcaggg ttaa 1394

<210> 53

<211> 413

<212> PRT

<213> *Aspergillus terreus*

<400> 53

Met Gly Ser Ile Ile Asp Ala Ala Ala Ala Asp Pro Val Val Leu
 1 5 10 15

Met Glu Thr Ala Phe Arg Lys Ala Val Lys Ser Arg Gln Ile Pro Gly
 20 25 30

Ala Val Ile Met Ala Arg Asp Cys Ser Gly Asn Leu Asn Tyr Thr Arg
 35 40 45

Cys Phe Gly Ala Arg Thr Val Arg Arg Asp Glu Cys Asn Gln Leu Pro
 50 55 60

Pro Leu Gln Val Asp Thr Pro Cys Arg Leu Ala Ser Ala Thr Lys Leu
 65 70 75 80

Leu Thr Thr Ile Met Ala Leu Gln Cys Met Glu Arg Gly Leu Val Asp
 85 90 95

Leu Asp Glu Thr Val Asp Arg Leu Leu Pro Asp Leu Ser Ala Met Pro
 100 105 110

Val Leu Glu Gly Phe Asp Asp Ala Gly Asn Ala Arg Leu Arg Glu Arg
 115 120 125

Arg Gly Lys Ile Thr Leu Arg His Leu Leu Thr His Thr Ser Gly Leu
 130 135 140

Ser Tyr Val Phe Leu His Pro Leu Leu Arg Glu Tyr Met Ala Gln Gly
 145 150 155 160

His Leu Gln Ser Ala Glu Lys Phe Gly Ile Gln Ser Arg Leu Ala Pro
 165 170 175

Pro Ala Val Asn Asp Pro Gly Ala Glu Trp Ile Tyr Gly Ala Asn Leu
 180 185 190

Asp Trp Ala Gly Lys Leu Val Glu Arg Ala Thr Gly Leu Asp Leu Glu
 195 200 205

Gln Tyr Leu Gln Glu Asn Ile Cys Ala Pro Leu Gly Ile Thr Asp Met
 210 215 220

Thr Phe Lys Leu Gln Gln Arg Pro Asp Met Leu Ala Arg Arg Ala Asp
 225 230 235 240

Gln Thr His Arg Asn Ser Ala Asp Gly Arg Leu Arg Tyr Asp Asp Ser
 245 250 255

Val Tyr Phe Arg Ala Asp Gly Glu Glu Cys Phe Gly Gly Gln Gly Val
 260 265 270

Phe Ser Gly Pro Gly Ser Tyr Met Lys Val Leu His Ser Leu Leu Lys
 275 280 285

Arg Asp Gly Leu Leu Leu Gln Pro Gln Thr Val Asp Leu Met Phe Gln
 290 295 300

Pro Ala Leu Glu Pro Arg Leu Glu Glu Gln Met Asn Gln His Met Asp
 305 310 315 320

Ala Ser Pro His Ile Asn Tyr Gly Gly Pro Met Pro Met Val Leu Arg
 325 330 335

Arg Ser Phe Gly Leu Gly Gly Ile Ile Ala Leu Glu Asp Leu Asp Gly
 340 345 350

Glu Asn Trp Arg Arg Lys Gly Ser Leu Thr Phe Gly Gly Gly Pro Asn
 355 360 365

Ile Val Trp Gln Ile Asp Pro Lys Ala Gly Leu Cys Thr Leu Ala Phe
 370 375 380

Phe Gln Leu Glu Pro Trp Asn Asp Pro Val Cys Arg Asp Leu Thr Arg
 385 390 395 400

Thr Phe Glu His Ala Ile Tyr Ala Gln Tyr Gln Gln Gly
 405 410